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Electrical Contracting

With Which Is Incorporated
The Electragist

September
1929

.....
*Back of National
Products*



National Electric Products Corporation
National Metal Molding Division
Pittsburgh, Pa.

Even when controlling
type "C" lamps.....

... the *Contacts* of this switch
will not burn

A new form
of contact spring
overcomes the most
frequent cause of
switch failure . . .

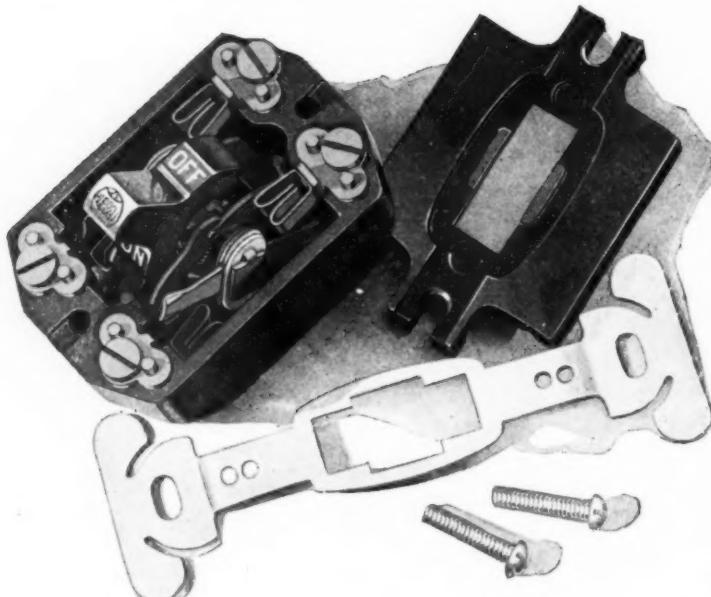
THIS new and radically different Shallow Flush Toggle Switch recently perfected by Hubbell is notable for many individual features and improvements.

One feature, however, is of particular importance . . . *the contacts of this switch will not burn at the "make"* — even when the switch is in circuit with type "C" lamps.

To eliminate ruinous burning and pitting of contacts, Hubbell engineers developed an entirely new form of contact spring which provides for the heavy inrush of current at the instant of "make". This new contact spring guarantees practically an unfailing, trouble-free life for Hubbell Toggle Switches.

We have opened this new switch here to show you the new contact spring and some of the other features which deserve your consideration. Compare this switch with one of former design. Then, clip the lower right hand corner of this page to your letterhead to obtain detailed information.

HARVEY HUBBELL, INCORPORATED, BRIDGEPORT, CONNECTICUT
Boston Mass., 176 Federal Street; Atlanta, Ga., H. C. Biglin, 138 Marietta Street; New York,
N. Y., 122 E. 42nd Street; Chicago, Ill., 318 West Washington Street; Denver, Colo., T. H.
Bodfish, 1109 Broadway; Philadelphia, Pa., Fifth Street, Phila. Bourse (Exhibition Dept.)



*Electrically and Mechanically
Perfect in Design — "Approved"*

A radically new form of contact spring scientifically designed so that two different rates of vibration are set-up in the spring; one tending to counteract the other. Thus recoil is practically eliminated in the ends of the contact spring when the solid metal contact blade strikes between them. As a result, burning and pitting of the spring is prevented — even when in circuit with type "C" lamps. An automatic "kick off" prevents sticking of blades in contact.

Commutator support is perfectly insulated. Commutator blades rigidly riveted to carrier, insuring positive alinement.

Spring arm is pivoted on a round shaft, seated in a symmetrical bearing, facilitating faster, smoother action without wear.

Operating mechanism is separate from the bridge and perfectly insulated.

A solid bridge with ears lies in a recess across Bakelite cover — entirely insulated; perfect alinement and rigidity insured.

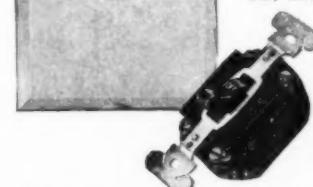
Each wiring terminal is held by two screws. Bakelite case completely encloses mechanism.

A complete line to meet any need —

- 9801—S. P., 5 amps. 250 volts; 10 amps. 125 volts
- 9802—D. P., 10 amps. 250 volts
- 9803—3-way. 5 amps. 250 volts; 10 amps. 125 volts
- 9804—4-way, 2 amps. 250 volts; 5 amps. 125 volts
- 9805—S. P., 20 amps. 250 volts
- 9806—D. P., 20 amps. 250 volts

Hubbell Screwless Plates of Bakelite

Ask for a description of these self-aligning switch and outlet plates. You can obtain them in any color or finish to exactly match any background.



HUBBELL
Toggle Switches

Electrical Contracting

With Which Is Incorporated The Electragist

S. B. WILLIAMS
Editor

Victor A. Hanson, Eastern Editor
Coit A. Smith, Field Editor
Louise Schaille, Assistant Editor

Vol. 28

SEPTEMBER, 1929

No. 11

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RESALE PRICE NEWS

Very few price changes were reported during the past month and those that did occur were of a minor nature.

"This section is certainly a very good step forward, and I wish to compliment you on same."

A survey of ELECTRICAL CONTRACTING readers who use the Resale Price Service shows the following statistics:

Using Service Daily.....	62%
Using Service for T & M billing	76%
Using Service for over the counter sales	49%
Using Service for estimating purposes	51%
Using Service for settling disputes	36%

"Have eliminated our own price book and use it (Resale Price Service) daily."

Many readers are tearing out the Price Service and filing it. Because it is printed on special colored stock so as to make it easy to find, we suggest the filing of the whole book instead. When filed, care must be taken to file the new section each month and discard the old. Never use the old prices when the new are at hand.

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CHAS. W. FORBRICH, Vice-Pres.

EDGAR KOBAK, Sec.-Treas.

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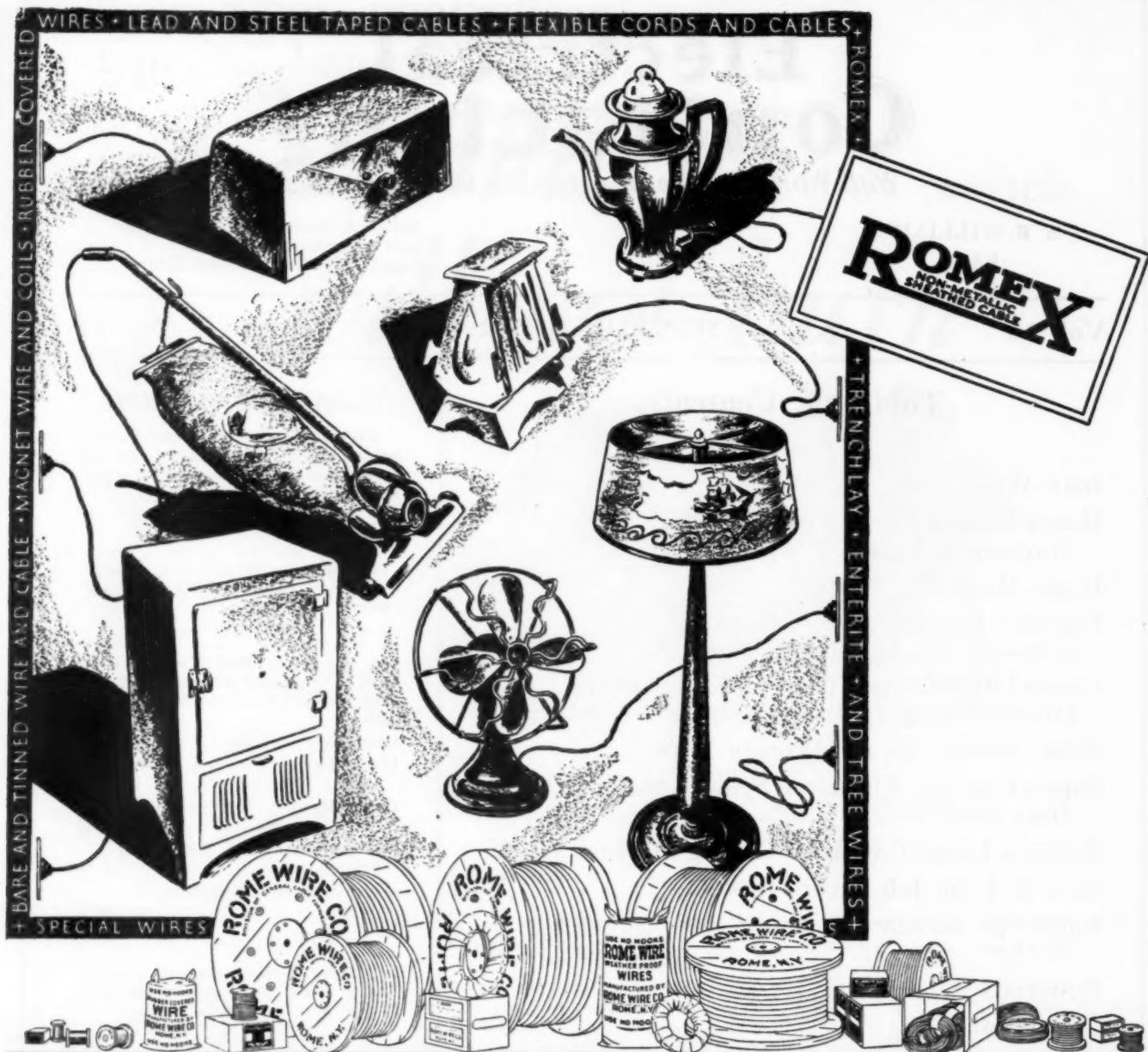
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Also publishers of *The Jobber's Salesman* and *Mill Supplies*



Make a place for more appliances with RomeX

Every gift date—anniversary, birthday, Christmas—puts more and more electrical appliances into homes of every type. And fully a third of those homes are woefully short of sufficient outlets for real convenience.

Here is a job for RomeX. It can be installed quickly without so much fuss and dirt that usually annoys the housewife. It can be fished easily through

small spaces. It is light to handle and needs few fittings.

Customers will get a safe, fast job at lower cost—and the contractor gets larger profits per job. RomeX is made for just such work. It means finishing more jobs per month.

Have you used RomeX? If not, let us send you complete information. Write for the latest RomeX booklet.

ROME WIRE COMPANY, Rome, N.Y.
Division of General Cable Corporation

2916-R

ROME WIRE

People Like Pictures

SAY what you like, but people like pictures. There is something real, something flesh and blood about pictures that you do not find in type.

People like to see things for themselves rather than be told—the telling is so apt to be boresome. With pictures, they can see the whole operation almost as though they were on the scene.

And besides, pictures don't lie. Not that writers of word articles do not tell the truth, but it is a fact, nevertheless, that being human they occasionally leave out some essential, or otherwise exaggerate in a way to color the reader's thinking. You cannot do that with pictures. . .

ELCTRICAL CONTRACTING may have been an experiment ten months ago. It isn't any longer. People like the picture method of presenting an idea. On every hand we hear contractors say what an improvement we have made in the magazine and the only improvement is the substitution of pictures for words. There has been no change in subject material.

And that is one of the reasons why the subscribers of ELECTRICAL CONTRACTING are so attracted to the magazine.

And since this method of attracting reader attention has proven its value in the editorial pages, might it not, perhaps, be equally effective in the advertising pages?

The aim of an advertisement is to secure and then hold the attention of the reader for a length of time sufficient to absorb what it is all about.

WITH a brand new product, the story can be told in words and secure attention because of its news value. When a product has been on the market for some time, however, it does not have the news value of a newly developed product and it becomes more of a problem to hold attention. How better can this be done than by illustrating with photographs the product's good points, one at a time, not as an exhibit, but in actual operation. And, finally, let us suggest that the photographs be retouched no more than is absolutely necessary—let them have that genuine look.

The Chinese have a proverb to the effect that one picture is worth a thousand words. ELECTRICAL CONTRACTING, from its experience in its editorial pages, has demonstrated the truth of this ancient proverb and it passes the idea on to its advertisers that they, too, might take advantage of it.

DURAFLEX REG. U. S. PAT. OFF. DOUBLE ARMORED

Armored Bushed Cable



The
A. B. C.
ANTI-SHORT Bushing
An ample supply is furnished with every coil of
DuraFlex A. B. C.

This Better Cable speaks for itself!

Here's the whole story at a glance — quicker and easier to install and doubly guaranteed against shorts—and remember—it's one of the



DURABILT PRODUCTS

ANACONDA WIRE & CABLE COMPANY

General Offices, 25 Broadway, NEW YORK
Chicago Office, 111 West Washington St.

Vol. 28
No. 11

Electrical Contracting

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1929

Conventions Ain't Like They Used to Be



Dear Mr. Editor:

I wish you would put a piece in your paper about why more men in this business should go to the Electragists' Convention at Swampscott—an' what they should do when they get there.

Conventions are something like the old grey mare—they ain't like they used to be. I c'n remember when a gang went to a convention and the meetings were called to order by the bartender using a bung-starter for a gavel, and after the close o' th' evening sessions th' delegates slept crosswise in revolving beds with their derby hats on.

Times have changed since then—and it ain't because of Andy Volstead's law, either. Th' men seem to ha' got some sense all by themselves, without any relief from Congress. But, on th' other hand, Mr. Editor, please don't talk about this being a "working" convention. We work hard enough at our jobs.

Seems t' me the way to start th' fellas thinking right about this Swampscott get-

together is t' make them realize that it's kinda like an airplane trip over th' whole contracting business. They sit there in that comfortable old New England hotel just sopping up broad-gauge ideas.

They're sitting in those meetings with no other thought in their heads than how they can find and apply the bed-rock principles of practical success to the contracting business, and when they get home and back on the job they have a skull full o' ideas which help 'em get bigger jobs at better prices.

I realize it's going to be pretty hard to make some o' th' men understand this point o' view. But as you know, Mr. Editor, those who attend the conventions generally seem to be the ones who are making the most money. This may be just a coincidence, but I don't think so.

When I said something like this to Henry Trimmer the other day—he's one of my competitors here in town you know—when I said this to Henry Trimmer he came back at me by asking why I wanted him to make more money. "What I make, you lose. On that basis, you'd pretty soon go bankrupt," sezze.

"Listen, Henry," I says, "You got that all wrong. If you and th' rest of th' men in this business here in town would always price your jobs so you'd make money, th' only fella who'd go bankrupt would be th' fella who manufactures red ink. Th' rest of us would be sitting pretty."

That's what this convention is for, Mr. Editor—to put the red ink manufacturer outa business.

John Wise

House Wiring

Coordinate by

By THOMAS W. COX

Cox Electric Co.
South Boston, Mass.



The foreman takes the cable crew and material to the old house which is to be wired, gives the journeyman the wiring layout and leaves him to do the job.



The foreman calls for the cable crew when they have finished their work and while they are loading the equipment and surplus material on the truck, he makes the layout for the rigid conduit work in the basement.



After the cable crew is taken to the next job the foreman returns to the office and makes out his stock sheets.

iring Crews ce by FOREMAN

COX

If the crews need additional material or need help of any kind, they telephone the office. The foreman keeps in touch with the office thus picking up the calls as they are received.



Between looking after the requirements of the wiring crews and handling the trouble calls, the foreman is a busy man. By having the routine work well planned he is nevertheless able to fit in a number of trouble calls each day.

Mr. Cox employs two crews on house wiring. One specializes on the cable work while the other specializes on rigid conduit. This article tells how the foreman coordinates the work of these two crews on each job.



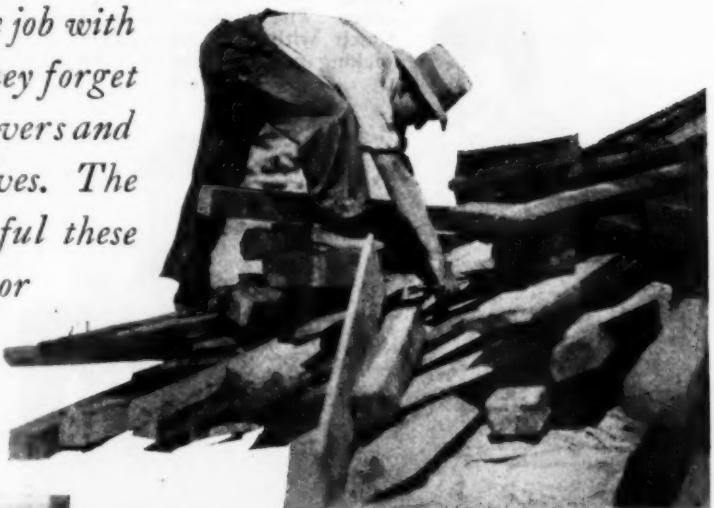
The foreman then gets out the stock required for the conduit part of the job and as soon as the pipe crew has finished its previous work he picks them up and takes them and the material to the job just left by the cable crew. They in turn complete the job and get it ready for inspection.

How each of these crews operates will be shown in later issues.—Editor

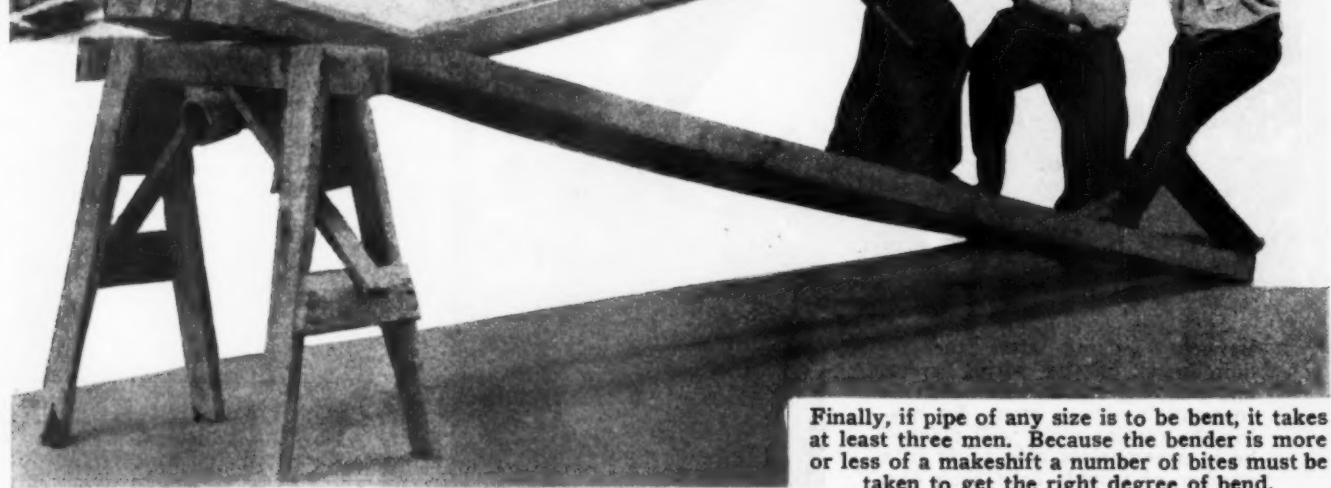
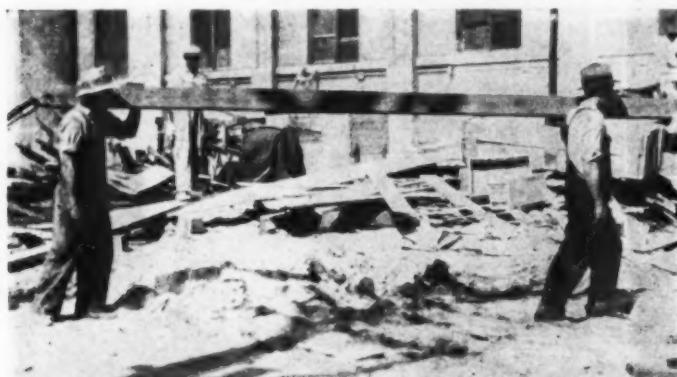
Non-Productive Labor *Home Made* PIPE BENDERS

Many contractors still bend pipe on the job with a home-made bending contraption. They forget that manufactured benders are labor savers and will, in a short time, pay for themselves. The pictures on this page show how wasteful these home-made affairs can be of labor.

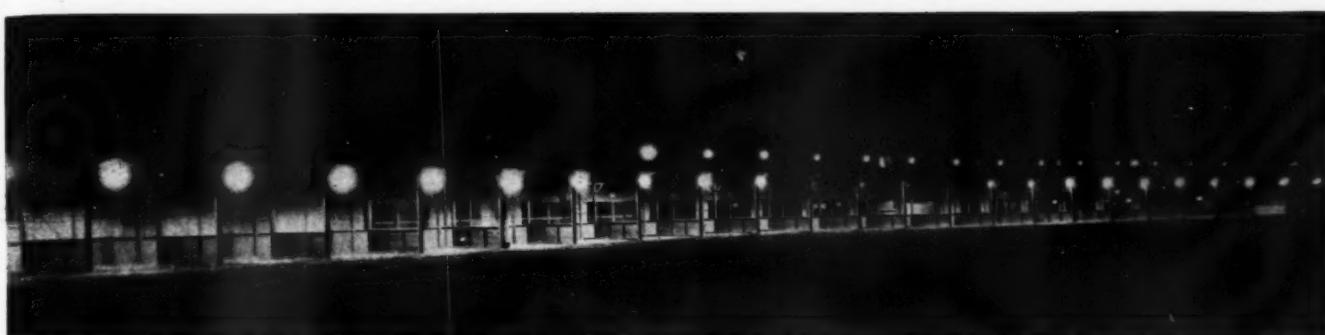
It takes two men, as a rule, to carry the timbers from the waste pile to the place where the bender is to be set up. After that the bender must be put together, taking a little more of the time of these men.



One or more men make search in the waste lumber pile for timber of the right size and length. If a fellow steps on a rusty nail there is "time out" and an accident report.



Finally, if pipe of any size is to be bent, it takes at least three men. Because the bender is more or less of a makeshift a number of bites must be taken to get the right degree of bend.



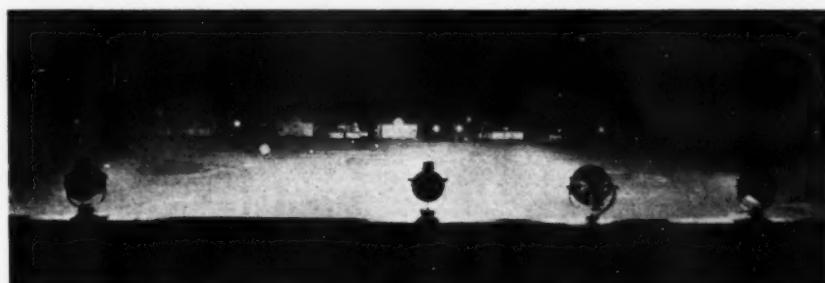
Projectors are spaced about one per booth, which are about 14 ft. square.

A new market for the contractor— **Lighting Practice Golf Courses**

By DEAN M. WARREN and S. E. STRUNK

National Lamp Works, Cleveland, Ohio.

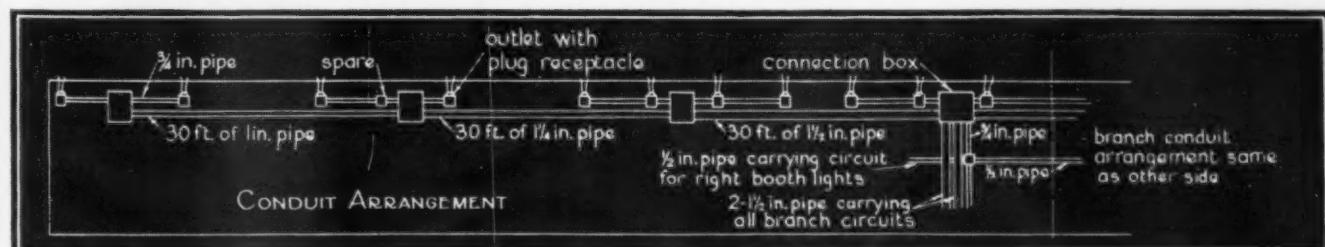
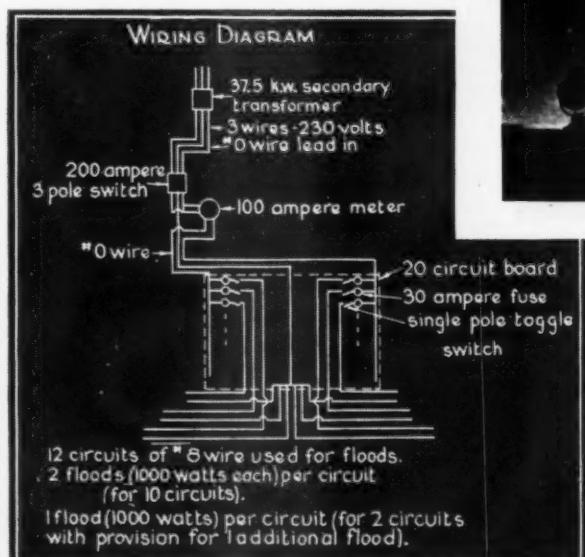
Practice golf courses are springing up all over the country. Not only must the ground be lighted, but the swiftly moving ball as well, so that it can be followed easily with the eyes during its entire flight. Also, the ball must have, approximately, the same amount of illumination throughout its flight so it will not seem to appear and disappear, speed up and slow down. Illumination on the ball depends on several factors such as its size, color, speed and lightness of background. About 6 ft. candles is sufficient



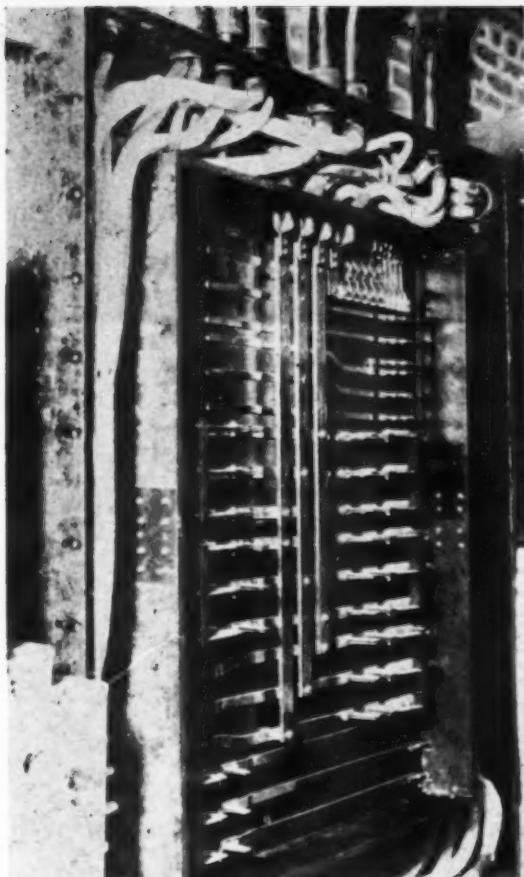
Mounting of floodlights on roof of booth.

Lighting Details

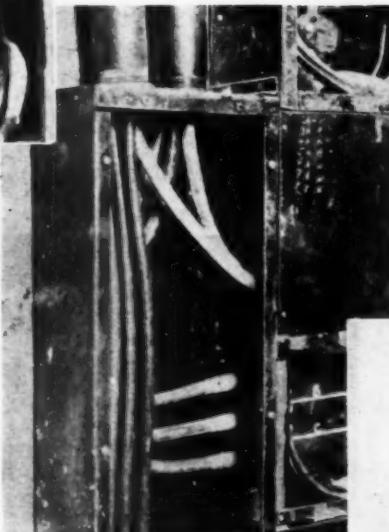
1. For short, high shots a fairly wide beam is needed. On this course, which includes 41 tees, 16 floodlights equipped with 1000-watt, general service lamps and lightly stippled glass covering doors are used.
2. For long shots, a high candle power projector is used with a large diameter reflector and a 1000-watt concentrated filament floodlight lamp giving a maximum of about 500,000 cp. Six such units are used.
3. To secure same level of illumination on the tees as on the ball while in flight, a 100-watt inside frosted lamp with standard RLM dome reflector is used in each booth.



COLORED WIRE *Saves Time in* Apartment House Wiring



Each color in the cables of each feeder entering the main 3-phase 4-wire, 120-208-volt distribution board indicates the phase to which that particular wire is to be connected, thus eliminating the time consumed in testing these cables for phase polarity. The time saved in using the colored cable against the ordinary black in this part of the installation is approximately 40%.



With a white braid cable for the neutral and colors of red, orange and black for the three phases, these cables were connected to the phases A, B and C without the aid of testing. There are five separate feeders of various colors running to the meter troughs, which were connected at approximately a 20% saving over the use of black braid.



Each panel was connected to one-phase (i.e. color) and the neutral, making a total of three panels to a feeder. Approximately nine feeders, totalling twenty-five panel boards, were installed within three and a half hours by four journeymen and two helpers.

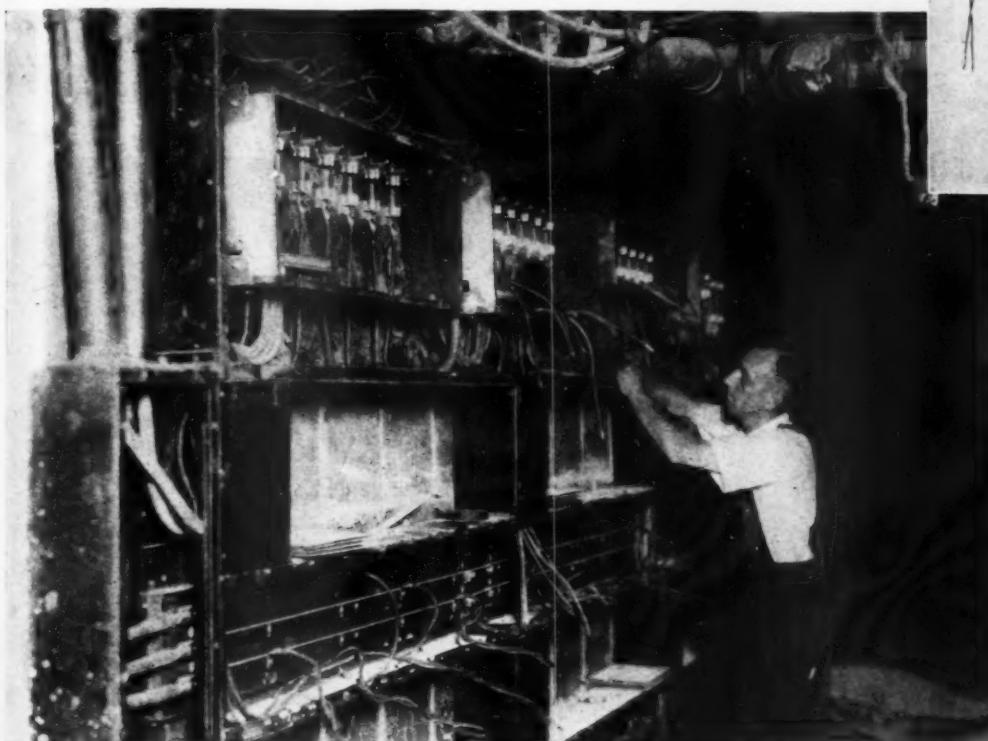
Portion of riser diagram
showing how the different
colored feeder cables were
used.

By
WILLIAM LEIBFRIED

President, William Leibfried Co., Inc., Contracting Electrical Engineers, New York City



Labor is saved by installing 3-phase 4-wire feeders of different colored wires for three panels with one phase to each panel with a common neutral for the three panels

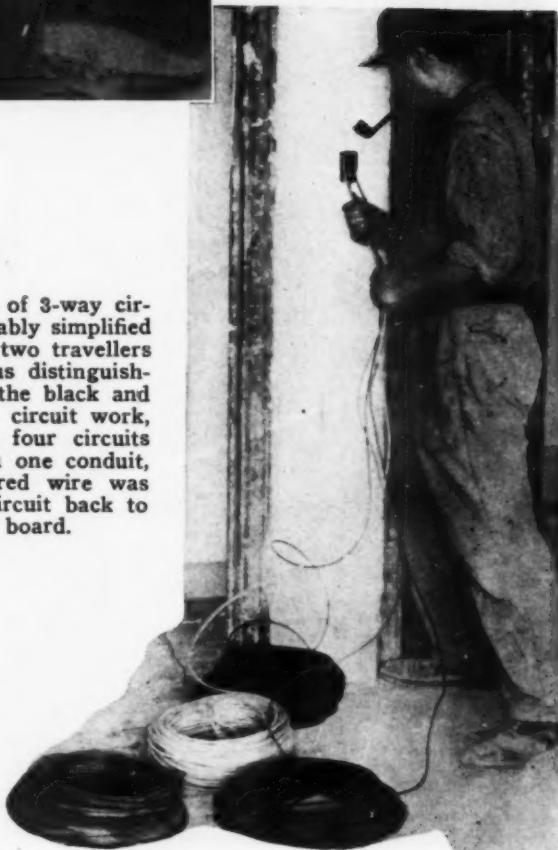


One man connected the lighting feeders to the panel boards in the apartments, while another connected the feeders to the apartment fuse panels located in the basement, by color, without the aid of testing. The time saved in connecting these feeders, as against the same type of work with ordinary black braid wire, was slightly more than 20%.

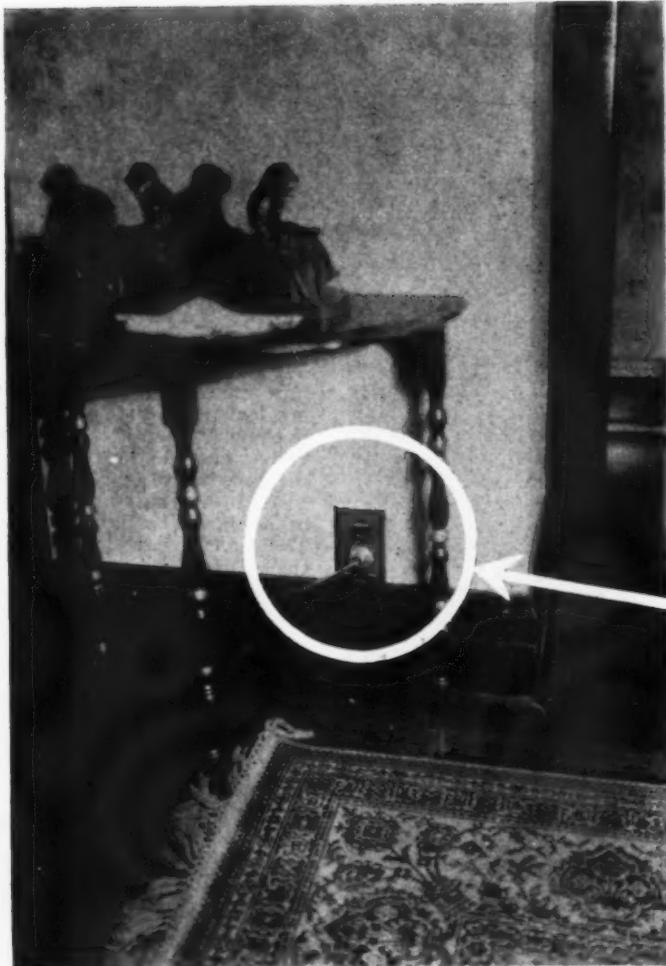
Feeder Number & Floor	Size or Wire	Length in feet	Color	Number of Cables
F 1	12	40	WHITE	
F 2	12	60	Orange	1
F 5	12	101	WHITE	
F 5	12	101	Orange	1
F 4	12	91	RED	
F 3	12	81	BLACK	
F 6	12	121	WHITE	
F 6	12	121	Orange	1
F 7	12	121	RED	1
F 6	12	111	BLACK	
F 11	12	163	WHITE	
F 11	12	163	Orange	1
F 10	12	153	RED	
F 9	12	143	BLACK	
F 14	12	160	WHITE	
F 14	12	160	Orange	1
F 12	12	167	BLACK	
F 16	12	161	WHITE	
F 16	12	161	Orange	1
F 10	12	151	RED	
F 9	12	129	BLACK	
F 14	12	192	WHITE	
F 14	12	192	Orange	1
F 13	12	182	RED	1
F 12	12	172	BLACK	
F 5	12	206	WHITE	
F 5	12	206	RED	1

The installation of 3-way circuits is considerably simplified by running the two travellers in red wire, thus distinguishing them from the black and white wires. In circuit work, where three or four circuits were grouped in one conduit, a separate colored wire was used for each circuit back to the panel board.

Portion of schedule for lighting feeders, indicating different colored wires for each panel board. By using cables cut to length and by placing each feeder on one reel, parallel, all legs were installed in the feeder conduit at one time eliminating the expense of cutting the feeder cables and paralleling the cables on the job.



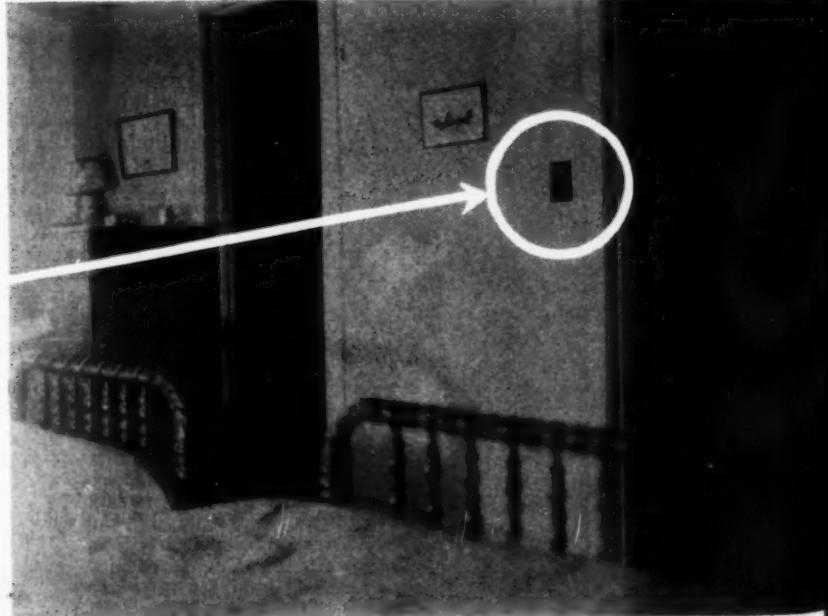
What Wiring do the



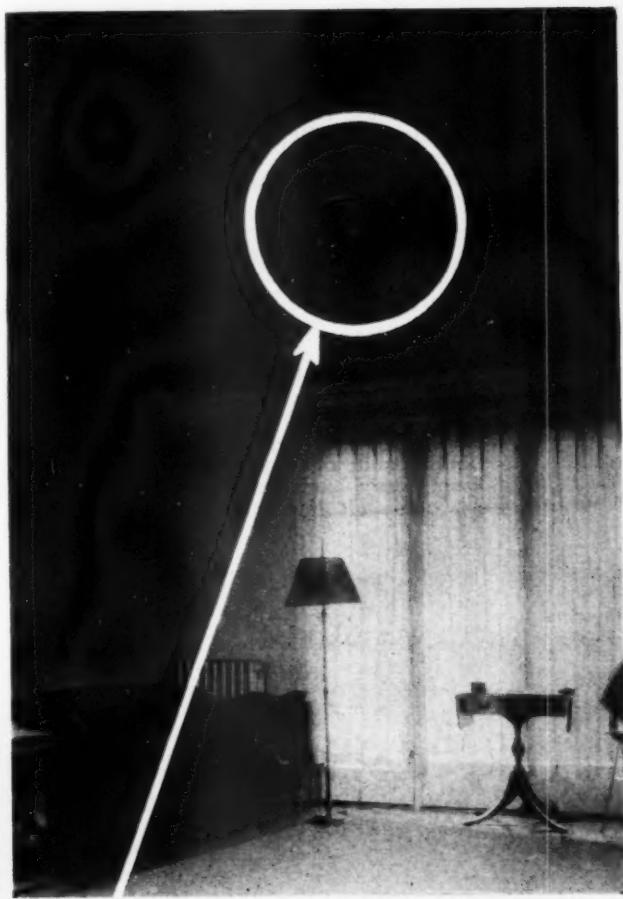
One-way Switches—
712—18%
The older houses, particularly,
need switches.

The Thompson report to the Industry Sales Conference indicated that only 30% of the women interviewed, or 930, were interested in having more wiring. These women wanted, in all, 4400 additional outlets as shown below:

Base Plugs—2582—59%
This is to be expected because of
their greater use.



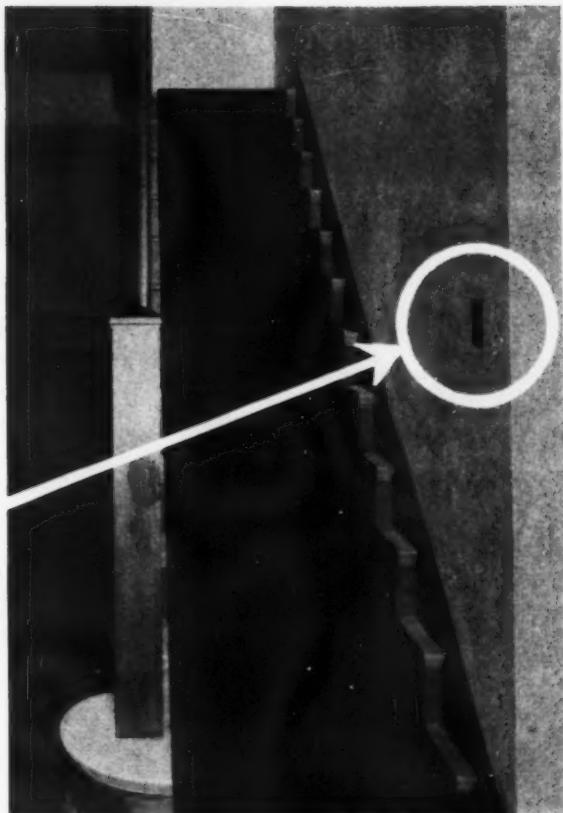
What Women Want—?



Ceiling Fixtures—
193—4%

As was to be expected, the market is not for new outlets of this nature, but rather for newer types of fixtures.

Wall Brackets—680—15%
This indicates an opportunity to sell additional fixed lighting.



Two-way Switches—
163—4%

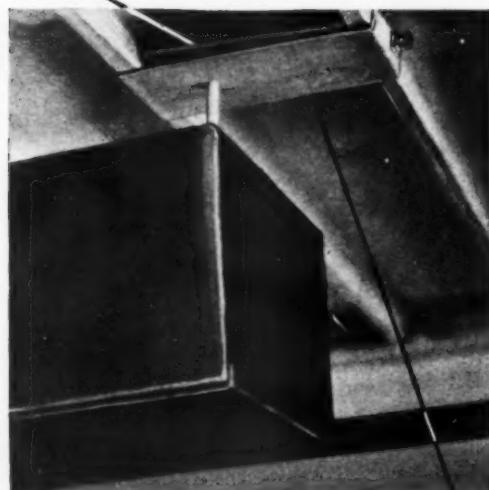
This will always be smaller than the others, but it should be proportionately larger than it is.

Supporting the Electric System on **TRUSCON STEEL ROOF**

This unique device devised by the Star Electric Co., of Springfield, Mass., permits the installation of conduit, fixtures, etc., directly on roof without in any way penetrating or warping the roof causing leaks

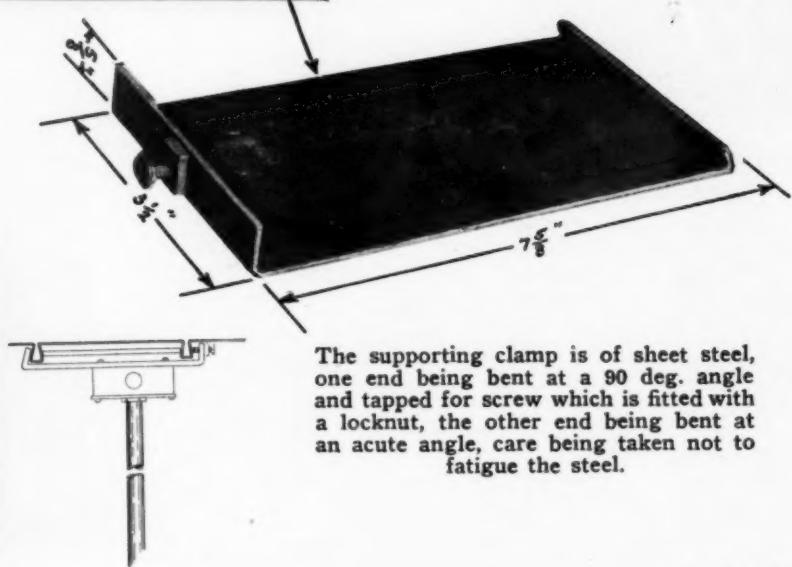


The spreading device, which prevents the warping of the roof when the screw on the clamp is tightened, is a flat piece of sheet steel of sufficient length to reach from one girder to the next. As this device is twisted into place edgewise, one corner is cut off at an angle.

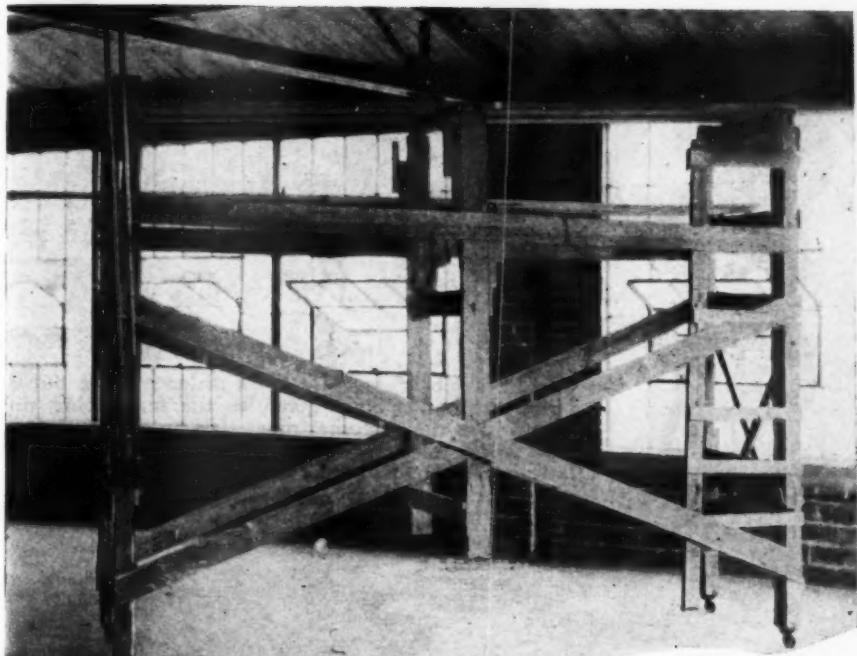


The flat plate is twisted into place between the small girders of the roof and the clamp. A screw is placed over the two girders and the screw and locknut tightened. This will support heavy loads such as pull boxes, conduit lines and fixtures.

Outlet box supported by one of these clamps by means of screws. Shown diagrammatically at right.



The supporting clamp is of sheet steel, one end being bent at a 90 deg. angle and tapped for screw which is fitted with a locknut, the other end being bent at an acute angle, care being taken not to fatigue the steel.



The scaffold ready for use in a large garage. It is 12 ft. long and 4 ft. wide and adjustable as to height by means of sliding supports drilled with $\frac{3}{4}$ in. holes opposite other holes in the main frame, and is held in place by short lengths of reinforcing steel thrust through the holes. The uprights are 4 by 6 in. and the rest of the frame 2 by 6. The scaffold rolls easily on any floor of ordinary smoothness and the men working on it can pull the whole affair around without descending.

Reduces Labor Cost with Rolling Scaffold

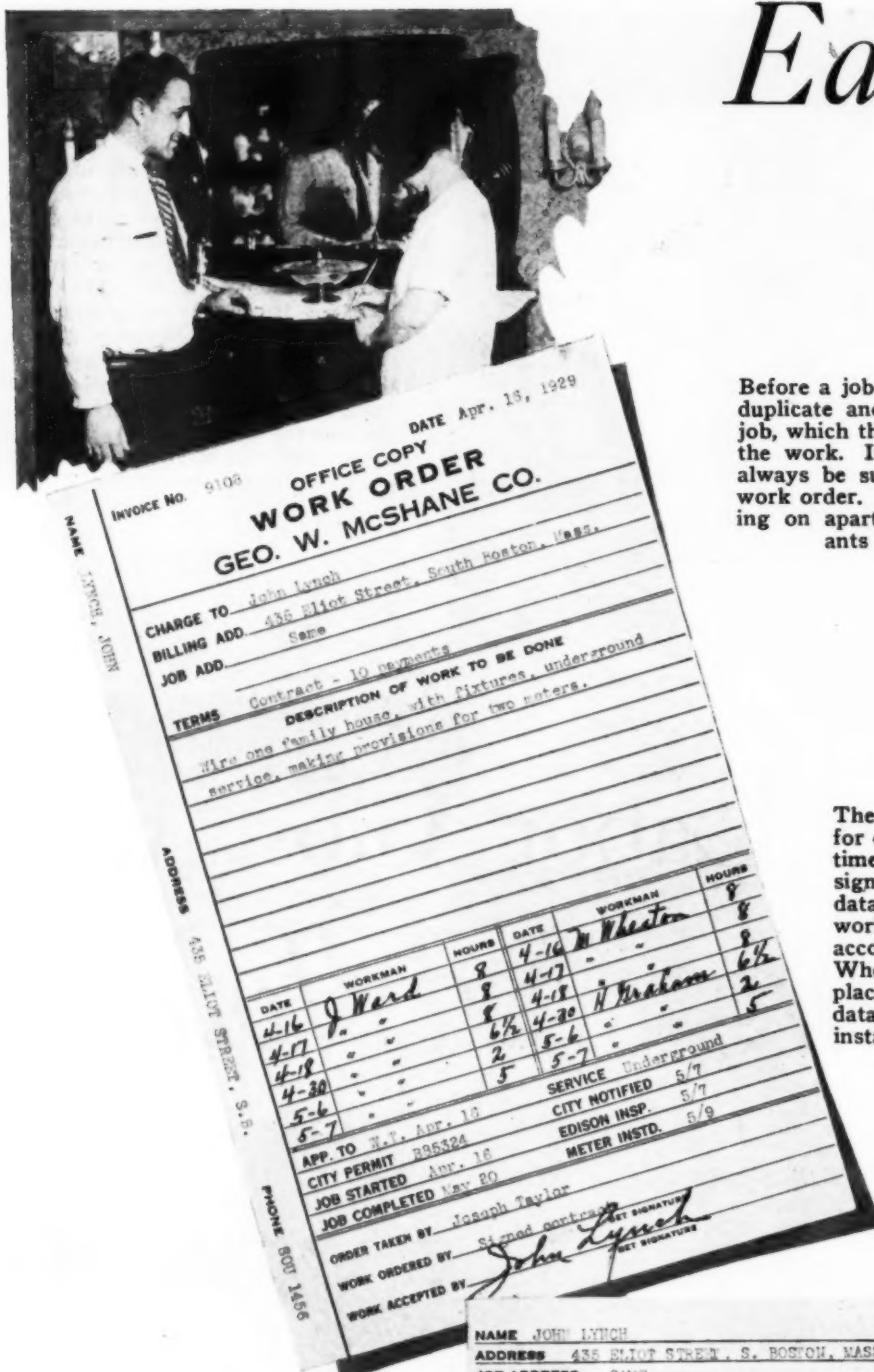
Fatigue from running up and down ladders when installing overhead runs and outlets can very quickly reduce labor efficiency. The Harrison Electric Co., Indianapolis, Ind., has found the answer to this problem in a rolling, adjustable scaffold here described



Two men work above, as shown, while one below hands up material and renders other assistance as needed. Incidentally, other trades borrow his rolling scaffold at every opportunity.



Easy to Keep



The invoice card is a permanent record of the job including its cost and profit. At the left is the description and cost and profit record. Notice that cost is: Permit plus material plus labor plus overhead. The billed price less the cost equals the gross profit which, less the agent's commission, is the net profit. The right side of the card is devoted to the time record.

Before a job is started a work order is made out in duplicate and a copy given to the man doing the job, which the customer must sign on completion of the work. If there are extras the workman must always be sure the customer signs for them on a work order. This is especially valuable when working on apartment houses where unauthorized tenants are liable to order work done.

The work order is made out in duplicate for each job. After the workman fills in the time and material and gets the customer's signature, it is sent to the office where the data is transferred to an invoice card. The work order is then filed in the active trays according to the name on the margin. When the work is done, the work order is placed in a general file with other detailed data on the job where it is kept until the installation is paid for, after which it is then destroyed.

NAME JOHN LYNCH		INVOICE NO. 9108		DATE APRIL 16, 1929			
ADDRESS 435 ELIOT STREET, S. BOSTON, MASS.		WORKMAN	DATE	DESCRIPTION	HOURS	RATE	AMOUNT
JOB ADDRESS	SAMS	H. Loren	5-16		3		
DESCRIPTION	One one family house, with fixtures, underground service, making provision for two meters.		5-17		3	1.00	6.00
PERMIT	P86324	BILLED	245.00		4-16		
STOCK	104.20	COST	209.06		4-17		
TIME	571.30	GROSS PROFIT	35.94		4-18		
25% overhead	41.81	Net's Com.	12.25		4-30		
COST	209.06	NET PROFIT	23.69		5-3		
5-7					5	.80	4.00
REMARKS							
Load - wiring 38-50w pix, 38-50w 800w iron		M. Heaton	4-16		8		
			4-17		8		
			4-18		8	.50	4.00
		M. Graham	4-30		8		
			5-6		2		
			5-7		5	.40	2.00
APP. to E.I. Apr. 16							
SERVICE	6/6	EDISON					
TO BLDG.		INSP.	5/7	CITY	5/7	METER	
GAS						WAT.	5/9
WORK							
BILLED MAY 17, 1929		T. Craig	5-18		8		
			5-17		8		
			5-20		1	.40	3.40

NAME: LYNCH, JOHN

ABREFOB 435 PILOT STREET 2-11

PHONE 801-3456

Job RECORD System

simplified, compact, yet complete method with
able card filing has been devised by George W.
Shane, a South Boston, Mass., electrical con-
tractor, using only a work order sheet
and an invoice card

	COST	CHARGE	COST	CHARGE	COST	CHARGE	COST	CHARGE
ODD SMALL ITEMS TRUCK, CARRIAGE ETC.								
1 6 x 6 cabinet	5.00		1 3 zinc plate	38.29		BALANCE FORWARD	54.67	
1 2 circ. cutout	.40		1 2 " "	30		2 mouthpieces	30	
55 ft. 1" pipe	3.48		5 single plates	20		56 ft. speak. tube	1.95	
10 ft. 1" T & Louts.	.40		17 outlet plates	55		2 speak. tube 1"	20	
7 June box & cov.	.06		2 1/2 fittings	1.36		8 caps	24	
5 ft. P cord	.16		3 1/2 nipples	2.00		1 #150 5 ft Inv.	10.00	
1 CS Key socket	.14		1 service switch	.70		1 #149 5 " Cand.	10.25	
1 08 Kless	.24		2 motor cabinets	4.30		1 #305 5 " "	9.50	
8 BX connectors	.20		3 ft. 6" pipe	.50		1 2 ft. ST Adams	2.00	
1 900 "	.87		2 ft. meter board	.24		1 Kitchen unit	1.25	
14 ft. #14 RC	.40		3 ft. 6" pipe	.06		1 1/2 pendants	11.00	
20 ft. #10 RC	.40		6 ft. strapping	.42		1 6" HI shade	.34	
2 ground clamps	.10		8 ft. #6 RC	.56		1 32 cylinder	1.00	
495 ft. 14-2BX	14.65		160 ft. bell wire	.45		10 assorted shades	1.50	
76 ft. 14-3BX	4.50		2 metal bells	1.00			10.20	
17 BX Sw. Boxes	1.70		4 push buttons	.40				
4 sing. switches	.80		1 door opener	.10				
6 3 way "	1.80		35 staples	.54.67				
2 sing. rec & ul.	.40							
5 dupl. "	38.29							

The back of the invoice card contains the list and cost of the material used on the job.



The invoice card is filed in the active trays according to the name on the bottom of the card. The data from the work orders is transferred as they are sent in, to this case. When the job is completed the invoice card is removed to the bill file consisting of the trays in the upper half of the cabinet.



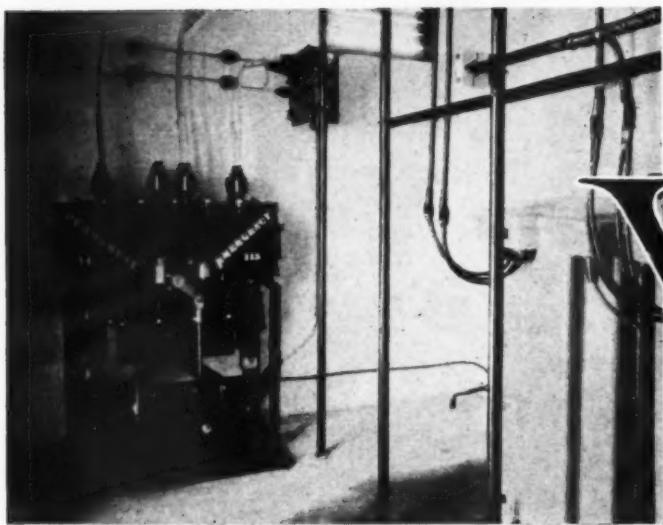
When the job is paid for, the card is placed in the permanent record file and indexed by name and invoice number. This system gives a lasting and compact record of work done and compiles a valuable amount of cost data.

INDUSTRIAL

Vaults for

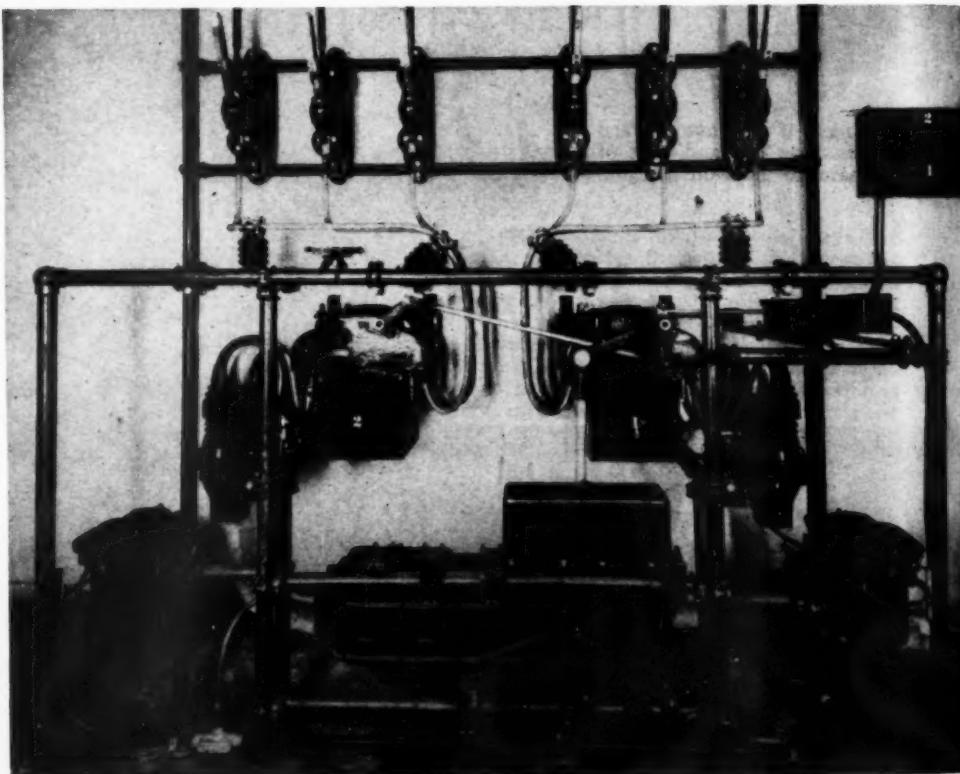
By CLOVIS M. CONVERSE

Sales Engineer
G & W Electric Specialty Co.



Typical modern transformer vault using G & W Vault Unit providing full automatic throwover. Note self-contained cable heads and separate tank for operating transformers.

Service connection for industrial vault using two oil switches with special motor mechanism for automatic throwover service. Note use of disconnecting potheads and expulsion fuses.



USUAL arrangements of equipment for this purpose are:

1. Two sets of single pole single throw knife blade disconnect switches.
2. One set of single pole double throw knife blade disconnect switches.
3. Switching table made up of disconnecting potheads.
4. Two oil switches either automatic or non-automatic, either three or four pole as may be required.
5. One double throw oil switch, number of poles as required.
6. Arrangement for electrical or mechanical automatic throw over from normal to emergency circuits. This may be applied to the two oil switches or to the double throw oil switch.

The arrangement chosen will depend on just how long a time service may be interrupted without serious inconvenience to the customer. Arrangements listed under 1, 2 and 3 require the services of a trouble man from the central station company and a delay of from 15 minutes to one hour may be ex-

pected at the best. This may also be true of arrangements 4 and 5. It is often possible to arrange these switches so that they may be operated from the outside of the vault in which case the customer can make the throwover within a few minutes.

Where an outage of even a few seconds duration might be dangerous as in a hospital, railway station or theatre, some form of automatic instantaneous throwover is necessary. This may be secured in several ways of which the following are typical.

1.—When two oil switches are used the switch on the normal feeder can be arranged to open in case of failure of that feeder and in so doing operate a contact which will cause the motor or

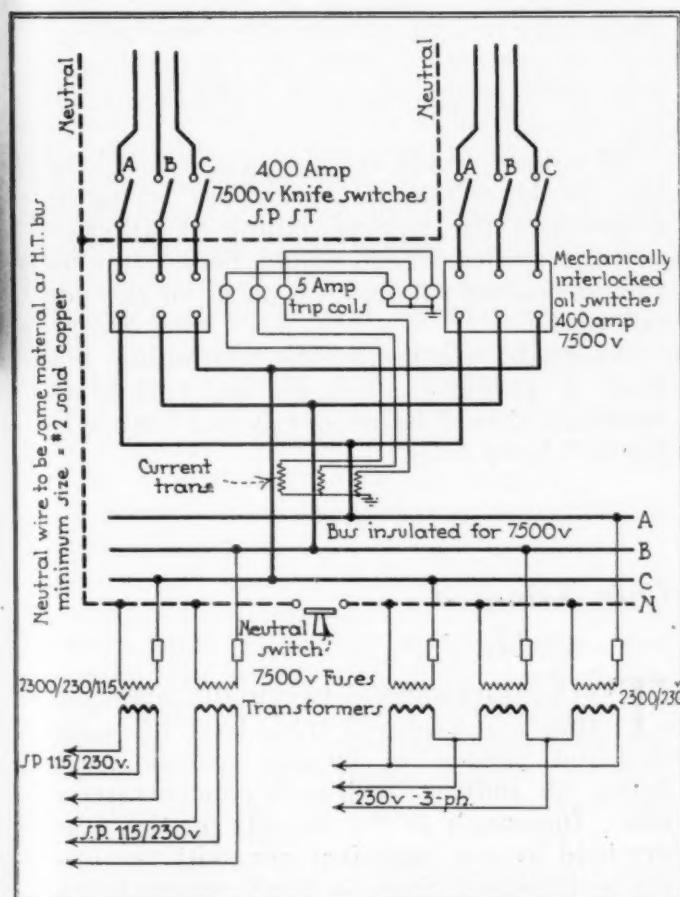
L SUBSTATIONS

Fifth article in the series on Industrial Substations. The final article will appear in a later issue.

r Emergency Service

solenoid operated switch on the emergency feeder to close, thus restoring service. With this arrangement it is necessary for a troubleman to visit the vault in order to return the load to the normal circuit and reset both switches.

2.—Several forms of automatic double throw oil switch are available, these are usually spring operated, either manually or motor wound. In the manual wound type the switch throws over instantly in case of failure of the normal circuit, and returns to normal as soon as voltage is restored. In the motor wound type the throw over takes place instantly but the return to normal is delayed ap-



Wiring diagram for transformer vault using two sets of single pole, single throw knife blade disconnects and two manually operated oil switches.

Automatic throwover unit in large office building showing details of cable connections and mounting.

proximately two minutes while energy is restored to the spring for the next operation.

3.—This same motor operating mechanism can be applied to two oil switches and arranged so that the normal circuit will open and the emergency close in case of failure of the normal circuit and then return to normal after rewinding the spring.

Any scheme of throwover described here would be used in connection with the proper potheads, disconnects, fuses or other devices and equipment required as described in previous articles on Industrial Substations.

Electrical Contracting

With Which Is Incorporated The Electragist

S. B. WILLIAMS
Editor

On to

Swampscott

THE end of this month, the Electragists go to Swampscott, Mass., for their Twenty-ninth Annual Convention.

Instead of a great big affair, in which the attendance of contractors was greatly overshadowed by representatives of manufacturers and jobbers the attendance this year will be limited to contractors and invited guests.

A most interesting program has been prepared for the business sessions and nothing left undone in the way of entertainment—especially for the ladies.

It is expected that the convention will hold more than the usual interest this year because the membership will, for the first time under the new constitution, vote for the officers.

All in all, it is anticipated that the forthcoming convention will be one of the most interesting held in years and one well deserving of a record attendance of Electragists.

Bricks Without Straw

LAST month at the annual meeting of league managers at Association Island, the budgets of a large number of leagues were read off and it was surprising to hear how many were so pitifully small.

Here we are, the big electrical industry, suffering from a lack of public demand and we give our market development forces no straw with which to make bricks.

It is remarkable what the leagues have been able to accomplish with the small amount of money available. Some of us have deplored the slowness with which Red Seal wiring has moved in this country. As we study available finances, the wonder is that Red Seal has made the progress it has.

With budgets of five thousand dollars a

year, and less, there isn't much that can be done except pay overhead. Certainly, there is little left for advertising and publicity.

It would seem as though our league managers had done a good job in making every penny work overtime. Isn't it about time that they are given some real money to spend in market development?

Voltage and Lamp Sales

VOLTAGE drop is a serious thing to a contractor if he sells lamps. If a lamp is burned under voltage, it gives less light and lasts longer. Only a few volts drop will double the life of a lamp.

Contractors wanting to increase their lamp sales can afford to make some voltage tests on customers' premises. If the drop is after the service switch, then additional wiring is required.

Of course, lower voltage lamps will help, but the lamp manufacturers are trying to discourage the sale of lamps of different voltages. Besides, it would be no fun for the contractor to stock up on all of the odd voltages.

Adequate copper in the beginning and then a periodic check-up on customers' premises should be productive of both wiring and lamp sales.

One Armored Cable

THE differences between the manufacturers of armored cable have been settled and instead of having two or more types, the industry will now concentrate on one. Inasmuch as the patents on this type are held by one manufacturer, with the others as licensees, there is every reason to ex-

pect market stabilization and the end of the price war.

Market stabilization will bring a competition of quality with the result that armored cable will make more friends. It will afford the manufacturers a greater opportunity to spend money improving the product and its production.

The contractors and the inspectors will welcome uniformity of product. The manufacturers are to be congratulated on the decision to produce only one type.

Conduit as

Third Conductor

THE use of the conduit for the third conductor in a three wire system has been proposed by Professor Edward Bennett of the University of Wisconsin, according to the July 27 issue of Electrical World. The advantages of the proposed system, it is claimed, lie in lower first costs in the order of: 20 per cent in conduit and wire, and 15 per cent in labor.

Such a proposal is a logical step following the propaganda for a bare neutral and is but one step removed from concentric wiring.

Theoretically, this system has many advantages. If the conduit is to take the place of a third wire, of course there is a material saving, not only in the elimination of one wire, but the smaller size conduit that can be used. Also, if there is one less wire to prepare and pull, and if the conduit is smaller, less labor should be used.

Unfortunately, theory and practice do not always back each other up. If such a system is to work, the greatest of care must be taken at every joint to see that it is tight, not only at couplings and fittings, but at boxes. That is where a large amount of labor is used in installing conduit.

Knowing how material is installed, it would almost seem as though each conduit joint would have to be bonded, either with a jumper or a special fitting. Not only will loose joints make poor continuity and ground, but it will also set up high resistance points which will undoubtedly cause sparking and the gradual erosion of the joints. If we have to use jumpers or special fittings, the element of lower cost begins to fade away.

It is reported that Professor Bennett pro-

poses to make a test of his system in one of the college buildings at Madison. It is, of course, hopeless to expect that this wiring will be done under ordinary conditions. Undoubtedly, there will be close inspection and every effort will be made to see that the workmanship is of the best.

This we trust will be taken into consideration when making reports of test and results.

In Union

There is Strength

ELECTRICAL contractors are a part of the building construction industry and for that reason their interests should lie in protecting that industry and in fighting any attempt to disorganize it.

Just as construction labor is organized, each in its own union, and the unions in the Building Trades Councils, so must each class of contractors have their own organization and together cooperate in an employers' association.

When electrical contractors pull away from their Building Trades Employers Association, or make separate agreements, they lose that strength which comes with union.

Building Trades Employers Associations are not always rightly managed. Sometimes they are run by a clique. The remedy, however, lies not in resigning from the association, but in trying to clear up the condition from the inside.

When a group withdraws from the association and it finds itself faced with a new wage agreement, its position is greatly weakened. And, how unfair it is to the building industry for one trade to make an agreement which is an entering wedge for a similar agreement with the other trades.

This policy of "snowballing" wages and hours is an old one with organized labor. Sometimes we suspect that labor is at the back of these movements to disorganize building employers for soon after one group breaks away from its employers association a new agreement of considerable consequence is proposed.

In union there is strength. Labor knows it and so should the employers. We have an aversion to seeing the electrical contractors singled out for a "snowballing" party.

Code Chats

Conducted by F. N. M. SQUIRES
Assistant Chief Inspector, N. Y. Board of Fire Underwriters

A Monthly Discussion of Wiring Practice and Questions of Interpretation, Presented with a View Toward Encouraging a Better Understanding of the National Electrical Code - - -

Splicing Tape

Rule 203b (last sentence) requires that splices, unless made with a splicing device, "shall be covered with an insulation equal to that on the wires." How may we know that this rule is being followed?

First, we must make sure that the tape used will supply the same insulation as was originally on the wires, and then that sufficient tape has been placed over the splice.

But, should not the quality of the tape insulation be just as good as the wire insulation? No one would think of using wire which had not been approved, so why should anyone use tape which has not been approved? Surely the insulation is just as important or, for that matter, more so, over the splices as elsewhere on the wire.

There are seven makes of tapes which are approved by Underwriters' Laboratories. Five of them are for rubber tape, and two for a combination tape. So, as long as there are approved tapes to be had, let's all use only the best, and insist upon using only those which are approved.

And let's hope that before long friction tapes will be listed by the Laboratories, so that we may have approved friction tape as well as the rubber.

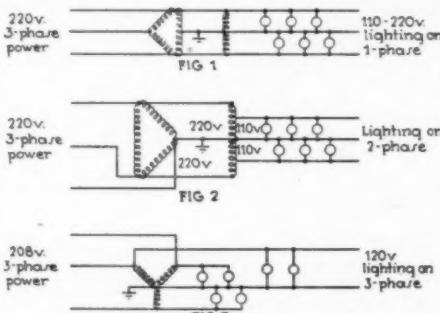
* * *

Heavy Lighting Load on Polyphase

An installation in a rural section consists of a lighting load of 60 K.W. with a power load of about a half dozen small motors, some of which are single phase 110-Volt. The lighting company supplying

this territory had available a 2300-Volt 3-phase primary line and was willing to set transformers for this load, but insisted upon balancing the load across all three phases. This load was such as to be all or none in use at one time. Part of the load would never be used without the full load.

The lighting company directed the electrical contractor to furnish three auto-transformers, one across



Three methods meeting Code requirements, primary 3-phase delta, 2300 v.

each phase, and with a mid tap in order that 110-Volt lamps could be used, as the transformers were wound for 220-Volt secondaries.

The contractor, being in doubt about satisfying the Code as to grounding, appealed to the inspection department which refused to sanction the use of the three auto-transformers as it would be impossible to have a grounded wire on each of the auto-transformers as required by Code rule 512.

The inspection department offered three methods which it would approve: First, an auto-transformer, having a mid tap which would have to be connected to a corresponding mid-tap (neutral) of the transformer secondary and grounded, could be on one of

the three phases. This would put the whole 60 K.W. on one phase and the lighting company would not consider this plan; and also their transformers had no mid-tap on the secondaries. The use of 4-wire 2-phase hook-up had to be rejected for this same reason.

Second, auto transformers could be used across two of the phases in which case the common connection between the two (the middle phase wire) would have to be grounded to comply with Article 512. The lights would then be connected between this grounded phase wire and the mid taps on each of the two auto transformers. This would give the required lamp voltage of 110, but would throw the load on two phases. This plan the lighting company also rejected.

Third, the 4-wire 3-phase system could be used and here no auto transformers would be necessary.

Transformers having secondary voltage of 120 would be used, star connected with the common point grounded.

The contractor was to order lamps for 120-Volts and motors for 208-Volts or for 120-Volts. This plan was adopted, everybody was happy and the Code satisfied.

* * *

Labelling of Short Cords of Cable

It is being found that some supply houses are receiving from manufacturers shipments of short lengths of armored cable which bear no labels of approval. It is conceded that the manufacturers are very careful about not sending out full coils of cable without labels and that most of the supply

*The Baldwin Plant at Eddystone*

THE BALDWIN LOCOMOTIVE WORKS
are completely equipped with
TRICO RENEWABLE FUSES
They're "Powder-Packed"

This gigantic institution chooses Trico Renewable Fuses for electrical protection. There are several good reasons why large enterprises like this select Trico.

The powder-packed renewal elements in Trico Fuses make them dependable, and they render the highly efficient service so much desired by particular electrical engineers.



Other important factors that round out the merits of this really outstanding renewable fuse are

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- No Charred Casings
- Copper-to-Copper Contacts
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RENEWABLE FUSES—PLUG FUSES—NON-RENEWABLE FUSES—FUSE PULLERS

Great Crystal Cave Kentucky
Discovered by FLOYD COLLINS

Onyx Banana Stalk formation, Great Crystal Cave, illuminated with STERLING Reflectors No. 196.

Gypsum Lilies, another picturesque formation illuminated with STERLING Reflectors No. 225.

Two more views of Grand Canyon Avenue, illuminated with STERLING exterior Flood-O-Lites No. 5240.

Onyx Stalactite, stalagmite, column formation, illuminated with STERLING Reflectors No. 225.

IT IS the unusual and more difficult jobs which test the real value of Lighting Equipment. The illumination of Great Crystal Cave with Sterling REFLECTORS and FLOOD-O-LITES is another tribute to the quality, efficiency, and "Enduring Lustre."

Reflector & Manufacture
1401-17 W-JACKSON BLV
Representatives

Sterling Reflectors & Flood-O-Lites



Gypsum floral formation, illuminated with STERLING Reflectors

Vault of Floyd Collins (discoverer of Crystal Cave), illuminated with STERLING Flood-O-Lites No. 3000.

Onyx Helectite formation, illuminated with STERLING Reflectors No. 256.

Grand Canyon Avenue, Great Crystal Cave, illuminated with STERLING Flood-O-Lites No. 3000. This Canyon is 200 ft. high, 700 ft. long, and 110 ft. wide.

again is convincing, demonstrated evidence of the dependability, reliability, and possibilities of Sterling Lighting Equipment for any anytime—anywhere. There are Sterling REFLECTORS and FLOOD-O-LITES to meet the requirements of every lighting job.

Illuminating Co.

Engineers
CHICAGO U.S.A.
Principal Cities

houses will not handle unlabeled coils and also, of course, that inspectors will not approve any cable which does not come from a labeled coil.

But, when we come to coils of cable which are not full 250 ft. or 500 ft. lengths, or, as commonly called "shorts," it seems to be another matter. The manufacturer seems to forget that labels are necessary, the supply houses "fall" for such advice from the manufacturer and the inspector has a hard time to ascertain whether any particular run was taken from a full labeled coil or from an unlabeled short. Both at the supply houses and on the jobs are found these short coils, with no markings of approval—and remember that the manufacturer's identification marks are not marks of approval.

There should be a label on all armored cable at approximately every 50 ft. and this applies to shorts as well as to full coils. Therefore, for each short up to a 50 ft. length there should be one label, for each length of from 30 to 100 ft. there should be 2 labels and so on. Any cables not so labeled should be rejected by the supply houses, contractor and inspector.

* * *

Gas and Water Pipe

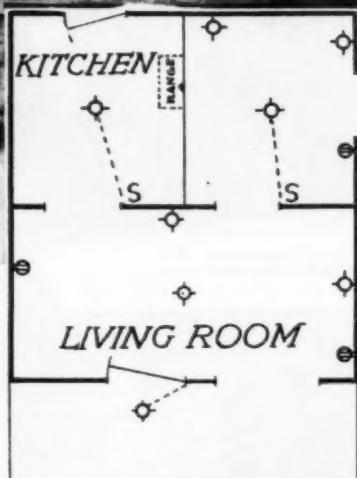
Inspectors and others are criticizing the use of commercial materials in place of electrical materials in electrical installations.

A short time ago there was considerable agitation against the use of plumbing nipples in setting up a row of electric meter pans. Electrical contractors found it very easy to get these from the plumbing supply houses and much cheaper than nipples made from approved conduit.

Now the complaints come on the use of gas piping in fixture work. Unfortunately we have no *approved* conduit or tubing smaller than 5/16 in. and very little of that, if any, as the smallest regular trade size is 1/2 in. So, for fixture work we must turn to commercial pipe. And the Code allows the use of this if all burr and fins are removed, and all sharp edges rounded.



WORLD'S SMALLEST RED SEAL HOUSE:—A rewired three-room old house in Toronto, Can., holds the record as the smallest Red Seal house in the world. The layout, shown above, was sold by the Electric Service League of Toronto and cost the owner an extra \$50.00. Adequate wiring is not for the rich alone—it belongs to everybody.



The trouble is, that in so many cases attention has not been paid to these sharp edges, and then hazardous conditions exist.

Just recently a job was found where the contractor had used 1/4 in. iron pipe in nipples of from 3 to 6 in. in length, between outlet boxes and sockets, thus forming fixtures. But the pipe was first cut off with a hacksaw and not reamed or smoothed in any way, and the wires were therefore subject to considerable abrasion.

The contractor's comeback to the inspector's violation notice was that "He had always done it that way," and "Everybody is doing it." If this be so then it is time that contractors and inspectors co-operate in eliminating this condition and certainly the Code should make provisions to prevent such hazards.

And, let's hope that the electrical trade will abandon the use of "com-

mercial" materials, where electrical materials may be used.

* * *

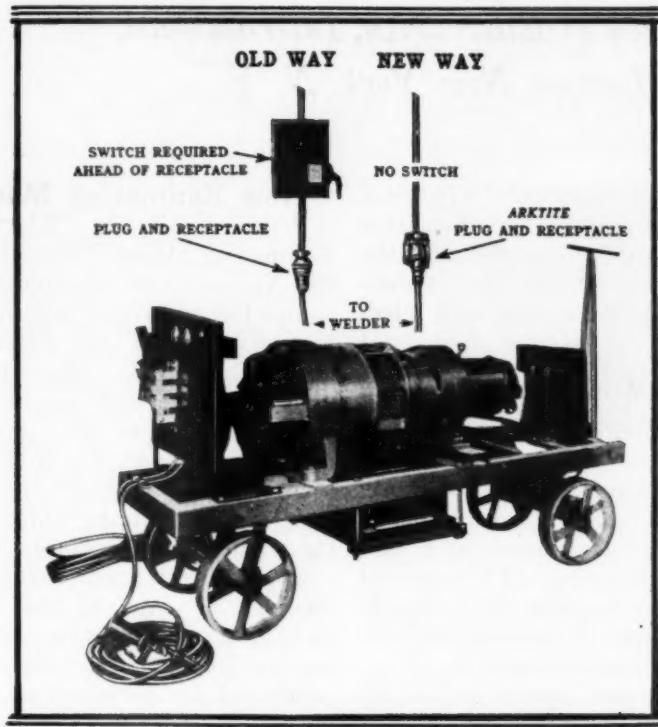
Fixtures and Outlet Boxes

Canopies and outlet boxes shall, taken together, provide ample space for the reception of the wires and their connecting devices. So reads Rule 1401-h.

Is there more to this rule than appears to be included in its wording? There is! Unfortunately the wording is not more specific.

Literally, the rule simply means that the outlet box and canopy of a fixture shall provide sufficient room for splicing. But also included was the intent that this splicing space was to be of metal—that is, the canopy should fit over the outlet box to form a fireproof enclosure and no flammable material should form part of this compartment.

ARKTITE CIRCUIT-BREAKING PLUGS AND RECEPTACLES



Arktite Plugs and Receptacles are provided with a suitable means for grounding the portable apparatus

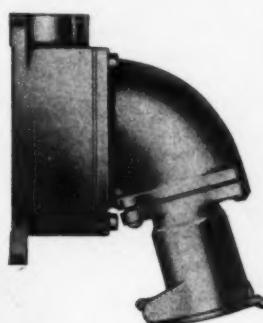
Arktite plugs and receptacles embody an entirely new principle in plug and receptacle construction which meets the demand for circuit-breaking plugs and receptacles in capacities heretofore considered impractical. As the name implies, the arc formed by pulling the plug is so completely confined in a chamber of insulating material that it is impossible to form a short circuit or ground. The air and gases confined in the chamber expand rapidly and smother the arc.

Arktite plugs and receptacles are National Electrical Code Standard as circuit-breaking devices at the listed rating in amperes and at any voltage up to 250 D.C. or 600 A.C.

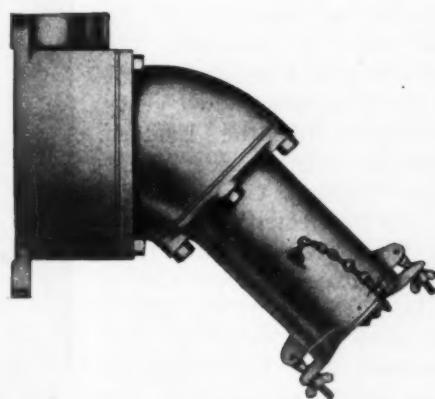
Arktite plugs and receptacles are described and listed in Bulletin 2121.



Type QEE
Plug Receptacle Equipment
Plug Inserted
15-Ampere Size



Type AJA
Plug Receptacle Equipment
30 and 60-Ampere Size



Type AJA
Plug Receptacle Equipment
100 and 200-Ampere Size



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A.E.I.

*News and Service
Information*

*Material for this department is supplied by the headquarters staff of the Association of Electragists, International,
420 Lexington Avenue, New York, N. Y.*

To Elect Officers and Committeemen

As provided under the revised Constitution, the president and vice-president of the A.E.I. will be elected on direct ballot at the Swampscott Convention. Individual members and accredited local chapter delegates in attendance will be entitled to vote, the latter casting the vote of each member of his chapter authorized by his approved credentials. Nominees for president and vice-president have been named from the list of members who have served on the Executive Committee.

Executive Committeemen for the nine geographic divisions will also be elected at Swampscott by members and chapter delegates from their respective divisions, using the official ballot as prescribed also for election of the president and vice-president. The term of office of Executive Committeemen is regularly two years. Committeemen for the Eastern, Southeastern, Great Lakes, Mountain, and Western Canadian Divisions will be elected at this convention for a term of one year only. Committeemen were elected under the old plan in the fall of 1928 to serve only until the coming election, and the terms of those previously elected will also expire at that time.

* * *

Endorses Panelboard Standards

The Underwriters' Laboratories Standards for Panelboards issued in July, 1928, and submitted for approval as an American Standard has had the endorsement of the Association of Electragists, International. Approval of the Un-

derwriters' Laboratories Electrical Council and of the manufacturers through representation upon the Industry Conference for Panelboards had previously been filed.

* * *

More Motor Specialists

Three hundred and twenty-eight Electragists scattered through Canada and the United States are classified in the A.E.I. membership records as conducting a motor repair business. This general classification includes also the sale and servicing of motors and industrial power installation.

This number represents an increase of approximately 20 per cent over the number so classified a year ago.



OLDEST LIVING ASSOCIATION CONTRACTOR IN CHICAGO:

Seventy-three years old and proud of it, is J. W. Steinmetz, head of Steinmetz Electric Co., Chicago. He began business there in 1885, when contracting was mostly bells, wet-batteries, etc., and he has gone through some heavy storms. Today he is fonder of the business than ever. As for activity, his own men say he can actually beat them climbing.

New Estimating Manual

Printing of the "Electragists Estimating Manual" announced in the August issue is rapidly being completed and copies will be ready for distribution to Electragists about October 1. Since the August announcement the headquarters office has received many requests that copies be immediately forwarded, an evidence that members are recognizing more widely the value of an accurate system.

Every Electragist member will receive one copy of the Manual as a part of his membership service and additional copies may be purchased by members at a price based upon the cost of production.

This improved Manual will contain about 200 pages and will be of fundamental value to Electragists and their estimators. A special section composed exclusively of all the estimating tables in the book has been provided for convenient daily reference.

* * *

Joint Committee on Motor Merchandising

The Joint Committee on Motor Merchandising, formed following organization of the Electragist Motor Section at the St. Louis Convention in 1927, will meet at Swampscott on Tuesday, October 1, for the further consideration of distribution problems affecting the motor and control equipment business and the motor repair field.

The manufacturers are represented on the joint committee by the following members appointed by the National Electrical Manufacturers Association:

O. F. Stroman, chairman, Westinghouse Elec. & Mfg. Co.; Clarence L. Collens, Reliance Elec. & Engineering Co.; L. W. Grothaus,

And now panelboards carry a guarantee!

quality makes this possible

By FRED B. ADAM, President Frank Adam Electric Company, St. Louis

To our customers and their customers who are the users of  panelboards and cabinets: As our Company was one of the very earliest manufacturers of panelboards — approximately thirty years ago—and particularly panelboards that were a unit with the steel cabinet, we have had a great deal of experience in the manufacture, and installation while contractors, of switchboards and panelboards.

In those days the standard practice was to take a piece of insulating material, usually slate or marble, and mount the bus bars, switches and fuse connections on the face of the panel. As a rule these parts were screwed on from the back, and when any part of the material went wrong, it was necessary to take out the entire panelboard, regardless of the size, to make replacement.

About 1920 we conceived the idea of a sectional panelboard made up of moulded insulating material that would have the insulating material as the dead face of the panelboard with the current carrying parts fastened into the proper recesses on the rear of each section, making each section a complete dead front panelboard ready for connecting to bus bars and fastening to the mounting back. As this design was entirely different from anything ever brought out before, naturally there was no kind of switch on the market to fit our particular idea of having the switch inserted from the rear. Our next problem was to design a switch; and naturally while we were about the designing of the switch and because of having had so much trouble with several makes of the flimsy types of switches, then on the market, we decided that we would carefully develop a switch, not alone to fit the proper housing in the rear of the dead front section, but make it absolutely dependable, as an operating mechanism, to give continuous service to the occupants of the building practically as long as the building was in use.

The result was the simple design,



but substantial and ruggedly constructed  switch, with few but substantial parts. After eight years of practical application, we can say that our  switch has absolutely proven reliable.

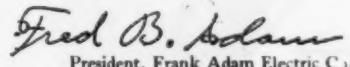
Right from the start it was our practice to ask all of our customers to let us know of the slightest difficulty in the operation of our switch or our panelboards, and we guaranteed to replace any section with a defective switch with a new one, when the section with the defective switch was sent to us at either any district office or the home office. It seems indeed surprising that with all of the possible accidents that the human factor always brings into a material of this kind, our switch replacements have been less than one for every hundred thousand switches that we furnished in the shape of assembled panelboards. Such minor defects as were originally encountered have now been practically entirely eliminated by the installation of a 1200-volt break down test. Each circuit switch is subject to this test before shipment is made.

To make our many customers (The Electrical Contractors) all over the

United States feel that they are getting the highest quality in this line of material, and that not only are  Panelboards and Cabinets "The Sign of a Better Job" for them but also a guarantee (to their customers, the owners and tenants of the buildings) that the manufacturers are behind their product we now guarantee the successful operation of the  switch in each and every panelboard section. If at any time within ten years a panelboard section with a defective switch is turned in at the Frank Adam Electric Company's district office or sent to the home office, a new section for replacement will be immediately shipped.

Making a guarantee for only five, ten or even fifteen years on the  switch is not giving it a fair chance, because we are satisfied that in twenty-five years the  switches in the  panelboard sections will still be giving the owners and tenants satisfactory service, because not only was this panelboard section and switch designed for just that kind of service, but in the last eight years it has proven that our theory, designing and construction have been a success as we planned.

Again I say to our customers and to their customers that the  panelboard and cabinet is not only the sign of a better electrical installation, but also a guarantee to the owner and his tenants occupying the building that they will get satisfactory service from the installation of  panelboard and cabinet and switchboards:


President, Frank Adam Electric Co.
St. Louis, Missouri

Frank Adam
ELECTRIC COMPANY
ST. LOUIS

DISTRICT OFFICES

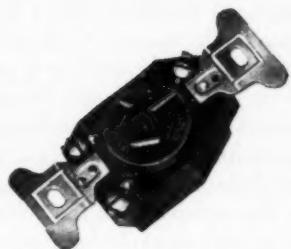
Atlanta, Ga.	Dallas, Texas	Memphis, Tenn.	Pittsburgh, Pa.
Baltimore, Md.	Denver, Colo.	Minneapolis, Minn.	San Francisco, Calif.
Boston, Mass.	Detroit, Mich.	New Orleans, La.	Seattle, Wash.
Buffalo, N. Y.	Jacksonville, Fla.	New York, N. Y.	Tulsa, Okla.
Chicago, Ill.	Kansas City, Mo.	Omaha, Nebr.	Vancouver, B. C.
Cincinnati, Ohio	Los Angeles, Calif.	Philadelphia, Pa.	Winnipeg, Man.

How do you



C-H Catalog 7921 Outlet Box type Receptacles are ideal for garage and similar installations. The duplex type particularly furnishes double convenience for trouble light, battery charger, etc. Included are the same one-piece, double grip, smooth-plugging contacts and other features found in the famous C-H 7920 standard receptacle. Single type has $3\frac{1}{4}$ or 4 inch steel box cover plate. Duplex has 4 inch plate. Approved by the Underwriters.

C-H 3-wire Flush Receptacles are in keeping with the latest trend in wiring. The base is made of unbreakable, heat-proof Thermopax—the clips of heavy phosphor bronze assuring positive contact and long life. The staked binding screws never loosen—and are large in size for strength and wiring convenience. C-H 3-wire Flush Receptacles meet Underwriters' requirements.



• SELL • COMPLETE • CONVENIENCE •

turn your experience into Sales Capital?

*Your Knowledge of Wiring Can
Bring in New Business... Increase
Your Sale of Wiring Devices...*

MANY long years of practical experience have given you valuable *sales capital* which can bring you new business, build your reputation as a wiring expert. Turning this experience into sales capital is merely a matter of offering to help the builders in your community with their wiring problems.

More than ever before the builder needs expert wiring advice... whether he is an architect, realtor or the owner. He needs your help in checking over wiring plans before the building is started... to save expensive alterations after it is completed.

Everywhere the increased use of electrical appliances has made complete wiring a necessity. Three-way switches on all stairways and in rooms with two or more doorways make a home more readily salable at a good price. A well wired store building with plenty of con-



C-H Toggle Flush Switches handle all lamps including gas-filled bulbs. Built shallow, they are convenient to install in any standard box. Made in single-pole, double-pole, 3-way and 4-way types. Approved by Underwriters.

venience outlets is always more easily rented.

Your advice is a service to the builder which he will remember, for he will appreciate relief from the details of securing complete wiring. Providing plenty of wiring outlets will keep his building modern for many years to come and you will earn the maximum profit on each job. Too, you are building good will for future contracts, both from the builder

and from his friends.

Specify the best quality wiring devices on every job to protect your customer good will. It takes no more time to use good quality devices and the job will last for many years, building reputation and bringing new business to you.

Specify the high quality line of C-H Wiring Devices... for ease and convenience in wiring and because the C-H Line is complete. Only one order from your wholesaler is necessary.

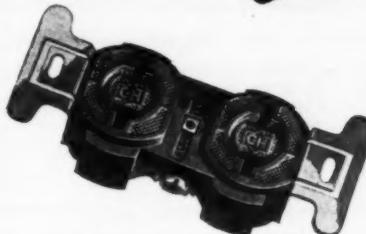
CUTLER-HAMMER, Inc.

Pioneer Manufacturers of Electrical Apparatus
1258 St. Paul Avenue MILWAUKEE, WISCONSIN

CUTLER HAMMER

MODERN WIRING NECESSITIES

C-H Duplex Receptacles are small and shallow—designed for easy handling and quick wiring. Parallel slots are polarized. Contacts are heavy one piece phosphor bronze doubled to insure firm contact at all times regardless of length of service and to prevent stubbing. Approved by the Underwriters.



C-H Toggle Type Surface Switch has a beautiful Thermopax cold-moulded base, cap of polished nickel, and a black composition operating lever which indicates whether current is on or off. Made in single pole, double pole, 3-way and 4-way types. Approved by the Underwriters.



• • • • • BUILD • GOOD • WILL • • • • •

(9645)

Allis-Chalmers Mfg. Co.; R. J. Russell, Century Electric Co.; Fred M. Kimball, General Electric Co.

The Motor Specialists have representation through a special committee of the A.E.I. Motor Section consisting of:

Louis Kalischer, acting chairman, Brooklyn; F. O. Sievers, Coney & Kuchel Elec. Works, San Francisco; W. J. Wheller, The Maintenance Co., New York City; J. R. Stolzenbach, Roland Electrical Co., Baltimore; Harry Donaldson, McArthur Electric Co., Chicago; Henry Trester, Trester Service Elec. Co., Milwaukee; Fred E. Briner, Briner Electric Co., St. Louis.

More Motor Sections Needed

Between forty and fifty motor specialists attended the Chicago Convention last year, expressing their satisfaction with the steps already taken to improve the organization of this branch of the business and offering their support individually of the policies approved by the Motor Section as being in the public interest and economically sound.

Every motor specialist who can possibly do so should attend the Swampscott Convention. The In-

ternational Motor Section has already had industry recognition and endorsement as a constructive organization. A large number of representative motor sections is the next step to be accomplished in order to make its work most useful and effective.

* * *

New Electragist Chapters

To the already large number of Electragist Chapters reported in previous issues, charters have been granted the following new Chapters during the month closing August 15:

Volusia County (Daytona Beach), Florida;
Waco, Texas;
Greenwich, Conn.;
Stamford, Conn.;
California Electragists, Northern Chapter;
California Electragists, Southern Chapter;
Flint, Michigan;
Lake-Porter Counties, Indiana;
Kansas City, Mo.

* * *

New York Motor Specialists

The affiliation last month of the Metropolitan Electrical Trades Association, Inc., of New York City, as the New York Motor Specialists Chapter of the A.E.I. adds the support of another strong local

group of motor specialists in the work of the International Motor Section.

* * *

Standard Filing System

During August there was sent to every Electragist a copy of "Standard Construction Classification for Filing" published by the American Institute of Architects, endorsed by the National Electrical Manufacturers Association and adopted in 1928 by the Association of Electragists, International. Accompanying this pamphlet, designated A.I.A. Document No. 172, is an alphabetical cross-index according to subjects, affording most convenient use of the system.

This Standard Classification can be very useful to Electragists for easy filing and reference to all catalogues, manufacturers announcements of new materials and devices, and any other special data for which their customers depend upon them for up-to-the-minute information. To be really good, a filing system must be complete, accurate, time-saving and convenient. In adopting this guide and recommending its use by all Electragists, the A.E.I. has satisfied itself particularly that these four important requirements have been met satisfactorily in the Electrical Section—Number 31.

NEW ELECTRAGISTS

The following contractor-dealers have made application and been accepted into the A.E.I. since the publication of the list in the August issue:

CALIFORNIA

Fullerton:
W. C. Selfridge
Long Beach:
A-Bright Electric Co.
Coast Electrical Co.
H. L. Douglas Electric Co.
Godard Electric
Gardner Electric Co.
B. Hartman
Mott Electric Co.
O. W. Newcomb Electric Co.
Wylde Electric Co.
Los Angeles:
H. H. Obermiller
San Diego:
E. R. Damarus

CONNECTICUT

Cos Cob:
The Hub Electric Co.
Darien:
Cable & Richdale, Inc.

Greenwich:

A. E. Wilson
New Canaan:
Chester F. Wood
Sound Beach:
Sound Beach Elec. Co.
Stamford:
Clear & Deyber
The Fairbanks Electric Co., Inc.
G. E. Risley, Inc.

FLORIDA

Jacksonville:
W. A. Stall Electric Co.
J. R. Huddleston Electric Co.
West Palm Beach:
Seminole Electric Co.

INDIANA

Indianapolis:
Alexander's Hdwe. & Electrical Shop

MICHIGAN

Detroit:
Brose Electric Shop
John H. Heberling
A. Van Vliet
A. Warring Electrical Co.

NEW YORK

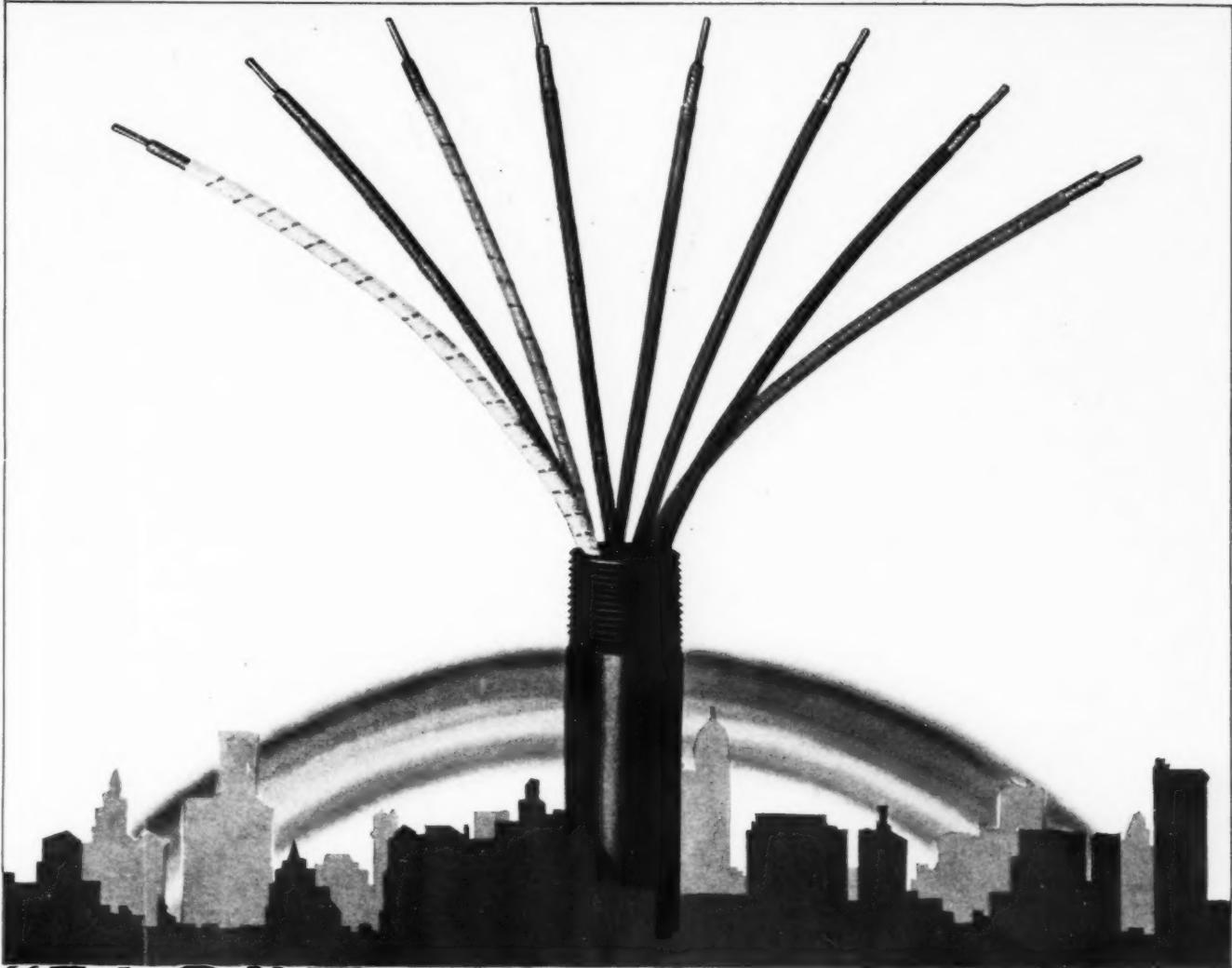
Brooklyn:
Thompson-Bonney Co.
Port Chester:
Harry T. Field

OHIO

Akron:
Kinnan Bros. Electric Co.
Cater Electric Co.
National Electric Co.
Romito Bros. Electric Co.
S. F. Mize
The Service Electric Co.
The Bowery Electric Co.
Akron Motor & Generator Co.

E. J. Hoffman

R. T. Brett
Snyder Electric Co.
Universal Electric Co.
D. C. Bendell Elec. Co.
Ohio Elec. Const. Co.
Forest Stein
Jahant Electric Co.
Hershey Electric
Jett Bros. Electric
Loomis Electric Co.
The G. L. Cook & Son Co.
Charles R. Dawson
Patterson Hdwe. & Elec.
The Ross Bros. Elec. Co.
Barberton:
H. L. Phepp
Edward Hoffstetter
Cuyahoga Falls:
A. B. Season



"U.S." Rainbow Line

50% Easier Pulling

Circuit Testing in one-third the time

United States  Rubber Company

We'll gladly serve you through your jobber

TRADE MARK

1790 BROADWAY . . . NEW YORK

United States Rubber Company, Room No. 481, 1790 Broadway, New York, N. Y.

- Please send me free samples of the 8 colored wires comprising the "U. S." Rainbow Line.
- Please send me proof of the above statements.

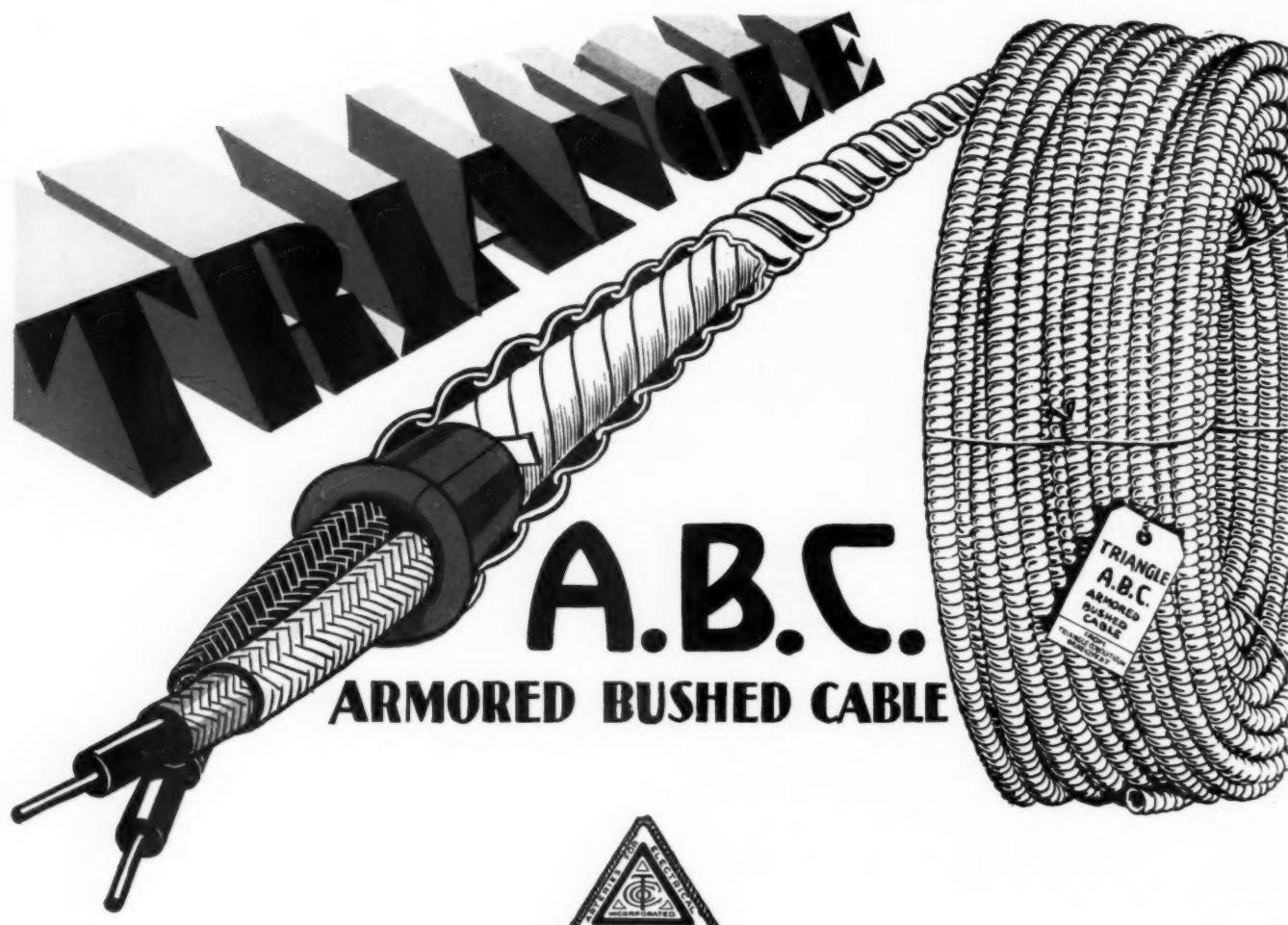
Name _____

Address _____

Company _____

Title _____

THE RAINBOW LINE OF "U. S." PARACORE WIRES AND CABLES



This new Triangle
Armored Bushed
Cable is the latest ad-
dition to the Triangle
Family. Triangle brings to
the manufacture of A. B. C. ca-
ble a reputation and experience
gained by many years of successfully
manufacturing wiring materials of the
highest quality. Triangle A. B. C. cable is
made in sizes from 14/2 up to and including
2/3 conductor. Complete stocks carried in
all principal cities will insure prompt delivery.

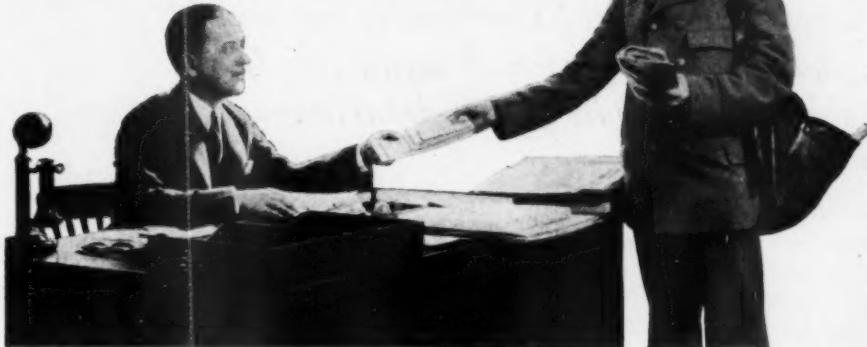
TRIANGLE CONDUIT CO., Inc.

General Offices: Dry Harbor Road and Cooper Avenue, Brooklyn, N. Y.

Factories: Brooklyn — Chicago — Wheeling, W. Va.

In Canada: Canadian Triangle Conduit Co., Ltd., Toronto

In the Editor's Mail



Banks the Only Gainers

Editor,
ELECTRICAL CONTRACTING:

I have read with interest your article entitled "Get Behind Detroit Credit Plan" in a recent issue of ELECTRICAL CONTRACTING.

There is no question but what the building trades are drifting into a very unsatisfactory status. The speculators and builders are taking extended credit, 30-60-90 days and some much longer. The contractor-dealers are faced with competition which compels them to accept the extended credit demanded or lose the builder as a customer. Then the contractor-dealer passes the extended credit bug to the jobber and the jobber to the manufacturer unless either of them (the contractor-dealer or the jobber) resort to bank borrowing or uses his surplus. As I see it the only business bettered by the extended credit as now demanded in the building trades is the bank. They are now loaning to the contractor-dealer, the jobber or the manufacturer instead of the builders or speculators and with less risk.

Century Electric Company,
W. A. Miller, Treasurer.
Clifton, N. J.

* * *

To Mend Gash in Conduit
Editor,
ELECTRICAL CONTRACTING.

Occasionally a run of conduit gets a gash in it and we have to mend it. What is the best way of doing this?

Memphis, Tenn.

Subscriber.

We show opposite four ways that are

commonly used to patch a broken or cut piece of conduit. We would hesitate to recommend the method in Fig. 4 for many obvious reasons, the primary one of which, of course, is the almost total lack of ground continuity. In mending conduit, two things are to be kept in mind: A good ground and rigidity of connections.—The Editor.

FIG. 1 PIECE OF RUNNING THREAD
ORDINARY COUPLINGS

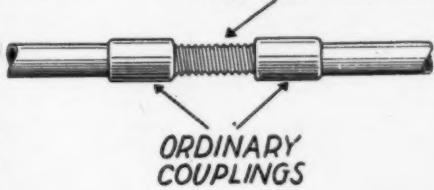


FIG. 2 SHORT PIECE OF PIPE
THREADLESS FITTINGS

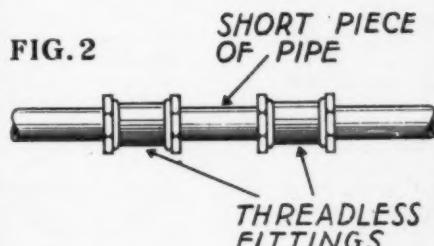


FIG. 3 SHORT PIECE OF PIPE
GREENFIELD CONNECTORS

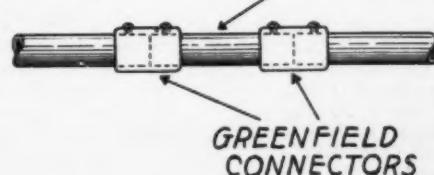
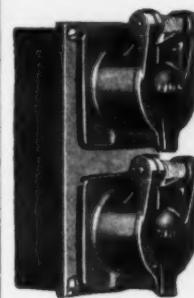


FIG. 4 SHORT PIECE OF PIPE
NAIL DRIVEN IN TO MAKE TIGHT
PIECE OF PIPE, NEXT SIZE LARGER SLIPPED OVER

RALCO

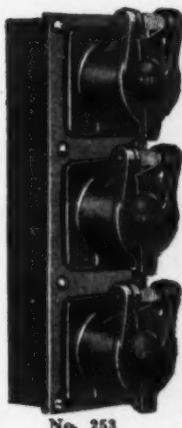
Rugged Receptacles and Plugs

Are made for all classes
of heavy duty service



The Receptacles illustrated are of the multiple gang type with self closing covers.

Made in 2 or 3 Pole—250 Volt AC. 30 amp.



Where more than one heavy duty outlet is desired at one location, these gang type Receptacles will be found very economical in time saved when installing, as well as space which they occupy. Width, slightly less than three inches. They are regularly furnished with hubs top and bottom and tapped for $\frac{1}{4}$ " Conduit.

Receptacles illustrated are Weatherproof, can be had without self closing covers or watertight, if so ordered.



Plugs for these Receptacles are polarized. The housings are drawn from heavy gauge steel, Cadmium Plated to prevent corrosion.

A terminal is provided for the extra grounding conductor in the portable cord. Plugs have an integral cord relief.

Easy to wire, simple in construction and light in weight.

Fully described in Bulletin No. 105.

Built right—Priced right

Ralco
Manufacturing Company
Designers and Manufacturers
125 North Albany Ave.
Chicago, Ill.

Contracting News

Information of Interest to Electrical Contractors consisting of items of news, short articles, practical ideas, etc. Our readers are invited to contribute to this department.

1929 Code Approved as Standard

The 1929 National Electrical Code was approved as an American Standard by the American

Standards Association on July 19. The new edition, now in course of publication, will be distributed by the N.F.P.A. as soon as available in the fall.

Market Development at Camp Co-operation

With a total enrollment of one hundred and ninety-nine persons including representatives of electri-

PROGRAM

Electragists' 29th Annual Convention, Swampscott, Mass., September 30-October 3, 1929

Monday	Tuesday	Wednesday	Thursday
<p><i>Morning</i></p> <p>Registration Approval of Credentials and issuing of Voting Certificates by Credentials Committee Golf Tournament TEDESCO Country Club 27-hole course Tennis Motor Coach Trips to Historical Places</p>	<p><i>Morning</i></p> <p>CONTRACTOR - DEALER SESSION Welcome to Convention Delegates LEAVITT L. EDGAR, General Chairman, Electragists' Convention Committee President's Address CLYDE L. CHAMBLIN, San Francisco "Charting the Course for Trade Associations" DR. HUGH P. BAKER, Manager, Trade Association Department, Chamber of Commerce of the United States, Washington Report on Joint Conference with National Electrical Wholesalers Assn. on Credit Control Plan "The Industrial Field for Motors" R. A. BALZARI, Marketing Counsellor, McGraw-Hill Publishing Co., New York</p> <p><i>Afternoon</i></p> <p>Old-fashioned New England Shore Dinner Convention photograph United States Coast Guard Drill and Life Saving Exhibition on the Beach UNION SHOP SECTION meeting OPEN SHOP SECTION meeting Joint Committee on Motor Merchandising</p> <p><i>Evening</i></p> <p>Visit to General Electric Works at Lynn Exhibitions of baseball and soccer under electrical illumination Dancing</p>	<p><i>Morning</i></p> <p>CONTRACTOR - DEALER SESSION "Stabilizing the Electrical Contracting Business" JOHN W. HOOLEY, President, Electrical Contractors Association of New York "Engineering Considerations in Electrical Contracting" ALLAN COGGESHALL, President, Hazell & Buehler, Inc., New York "Standard Clauses for Proposals" L. E. MAYER, Chairman, Architects and Engineers Comm. "Principles of Fair Practice" Allied Construction Industries Comm. "The Electrical Approval Bureau" W. C. BURTON, President, Electrical Approval Bureau, Inc., St. Louis</p> <p><i>Afternoon</i></p> <p>Steamer Sail around Boston Harbor, stopping at great Edgar Power Station for inspection of plant</p> <p><i>Evening</i></p> <p>CONVENTION SESSION (Members only). Election of Officers President and Vice-President Divisional Caucusing and election of Divisional Executive Committee-men Dancing</p>	<p><i>Morning</i></p> <p>CONTRACTOR - DEALER SESSION National Motor Section Report and Recommendations Draft State Licensing Act "How to use Commercial Arbitration" JOSEPH MAYPER, Trade Relations Counsel, American Arbitration Association, N. Y. "Indirect Lighting" WM. EDWIN CLARK, President, Clark & Mills Electric Co., Boston (illustrated)</p> <p><i>Afternoon</i></p> <p>GENERAL INDUSTRY SESSION Introduction by President Chamblin Address: CHARLES L. EDGAR, President, Edison Illuminating Co., Boston "Through - the - Dealer Merchandising" H. H. COURTRIGHT, President, Valley Electrical Supply Co., Fresno "Light's Golden Jubilee" HARRY C. WHITE Presentation of 1929 McGraw Award of Contractor-Dealer Medal Presentation of President's Emblem Introduction of New Officers Adjournment</p> <p><i>Evening</i></p> <p>Old - fashioned Barn Dance, in Costumes Gatineau Troubadours and other unique features</p>

MEDICAL and DENTAL
ARTS BUILDING
Chicago

ENAMELKOTE

installed in this building provides raceways that measure up to the exacting requirements of a perfect wiring system.

GALVAKOTE and ENAMELKOTE

are now being used throughout the nation in construction of buildings, large and small, of every class and for every purpose. Skilled workmen converting high grade materials into finished product have won for Galvakote and Enamelkote their super-quality reputation.

ENAMELKOTE

presents to the user of rigid conduit pipe, a new and labor-saving

Sealtight Thread Protector (patents pending)

a two-piece, two-metal device, machine-applied to thread before pipe is enameled and applied in a manner practically to provide an air- and water-tight cover for the thread. Protector stays on until purposely removed and is easily and quickly taken off without the use of special tool. However long stocked under most damaging conditions in storehouse or on the job, removal of Sealtight Thread Protector reveals sharp, clean threads.

**No enamel—no dirt—no lime—no cement—
no sand—no rust—no chasing.**

Enamelkote with Sealtight Thread Protector is better, but costs no more, than ordinary conduit pipe.

Write us for details concerning this important improvement.

Distributed by leading wholesalers everywhere.



Architects

D. H. BURNHAM & CO.
Chicago

General Contractors
THOMPSON-STARRETT CO.
Chicago

Electrical Contractors
HATFIELD ELECTRIC CO.
Chicago

CLAYTON MARK & COMPANY

CHICAGO

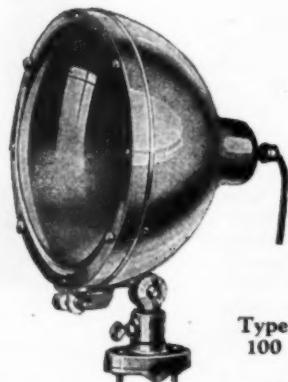
Manufacturers of
GALVAKOTE and ENAMELKOTE
SUPER-QUALITY RIGID CONDUIT PIPE

FLOOD LIGHTING IS NEW and Profitable for Every Electrical Contractor

Type F170



Growing in popularity every day—cities first—now the small towns . . . Night turned into day . . . New buildings everywhere highly illuminated and made more beautiful . . . and the advertising value has been proved to owners.

Type
SJ 204Type
100

Get the Banks

Floodlighting keeps marauders away . . . Banks, Public Buildings Storing Art Treasures are beautified and protected. Amusement Parks, Barbecues, Filling Stations, Bill Boards, Danger Points, Bridges, Railroad Yards and Crossings, Private Garages and Driveways . . . Yes sir, floodlighting is new, but it is established and going over in a big way.

We Help You

Our illuminating engineers have worked out the installation problems for you . . . National Floodlight Projectors meet every floodlighting requirement . . . Fewer projectors are needed and this and many other superior points lands the business for you. Write today for catalog of the complete line and sales tips.

**NATIONAL APPLIANCE
COMPANY**
JACKSON, MICHIGAN

DIVISION OF REYNOLDS SPRING CO.

cal leagues, power companies, manufacturers, wholesalers and contractor-dealers, Camp Co-operation IX held at Association Island, closed on August 6 after five days of conference on local co-operative market development problems.

The papers presented at this conference were all of a market development nature.

Outside speakers included: Arthur Huntington, Iowa Railway & Light Corporation, who spoke on the subject "Our Industry—Its Stability and What It Offers Us"; J. H. Kuhlemeyer, "Does the Contractor Make Money on Red Seal Wiring?"; A. Penn Denton of the National Electrical Manufacturers Association, "The Place of the National Electrical Code in Our Business Development Work"; A. E. Allen, vice-president and general manager, Westinghouse Lamp Company, on "Franklin Red Seal—A National Plan to Increase Lighting Business"; H. Freeman Barnes, Edison Lamp Works, on "Light's Golden Jubilee"; Charles L. Benjamin, managing director, Artistic Lighting Equipment Association, on "How to Sell New Lighting Equipment to Old Homes"; and Leroy E. Kern, technical secretary, The American Institute of



SPECIALIZES IN LARGE WORK:

—The Standard Electric Co., Hammond, Ind., does lots of industrial, school, mercantile and building wiring. A. L. Evans, president, is on the left. Next is Mrs. Evans, who has an unusually wide acquaintance among the electrical folks both near and far. In 1928 she had charge of arrangements for the women's entertainment at the Electragists' Convention at Chicago. On the right is W. D. Stoddart, secretary-treasurer, who handles the estimating and engineering.

ANNOUNCING

THE
SIMPLEST OF ALL
FERRULE TYPE FUSES

One-piece caps—no loose washers.

Vents through end caps instead of threads provide positive venting and lengthen fuse life.

THE new ferrule type Union Renewable Fuse has only three parts—two caps and a casing—besides the renewable link. Caps are one-piece insuring positive contact. No loose washers to handle—making renewal quick and easy. Simply pull out burnt link, put in a new one and replace end caps.

Vents are through the end caps—not the threads. This improved method of positive venting relieves pressure generated when the fuse blows, assuring maximum life for the fuse and easy renewal. Casing is made of best grey horn fibre, with threaded

brass ferrules. Both ends are open for inspection and cleaning. Substantial size and correct proportioning of all metal parts insure against undue heating.

The link is supplied bent at one end. When inserted and bent over at the other end it fits—automatic adjustment for length.

Thus, with this new ferrule type fuse, and our present knife-blade type, you now have Union Fuses of superior construction, greater simplicity and longer life for every requirement. Detailed information on request.

Jefferson Electric Company

1503 West 15th St., Chicago, Ill.

UNION FUSES

FERRULE TYPE RENEWABLE

Because they are worth more they really cost less

BENJAMIN-STARRETT

Heavy Duty Lighting Panelboards and Steel Cabinets



**Safety Front Type Heavy Duty
Benjamin-Starrett Panelboard**

The wide variety of circuit arrangements makes it easy to select just the right panel to meet any residence, commercial, institutional or industrial wiring requirement.

Many exclusive Benjamin-Starrett features cut installation time to the minimum, assuring the contractor a sure profit on his panelboard jobs.

The unit sectional construction and individualizing of parts provide the greatest accessibility and flexibility, assuring the highest type of continuous service at a minimum of maintenance expense.



FREE—This 80-page catalog of complete listings and illustrations. Send for it today.

Benjamin Electric Mfg. Co.

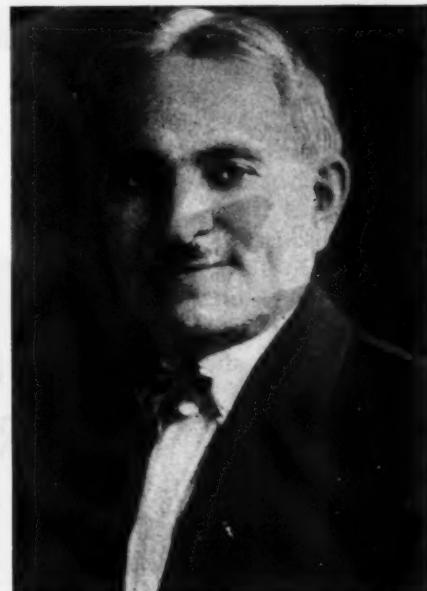
General Offices and Factory

DES PLAINES, ILL. (Chicago Suburb)

New York

Chicago

San Francisco



SPECIALIZES IN WIRING CHAIN STORES:—Ernest C. Headrick of Denver has developed a standard layout and specification which is used by most of the chain store groups for whom he has installed wiring. "Successful management of chain store wiring contracts," he says, "is profitable if contractors develop a system of handling and a standardization on materials which will enable the contractor to cut waste to a minimum. Speed is essential, and workmanship is a prime necessity, but the contractor must study his business and develop the short cuts which will eliminate unnecessary labor and scrap materials." Mr. Headrick is a member of the A.E.I. Executive Committee.

Architects on "Building and Maintaining Satisfactory Relations with Architects."

Addresses by league managers and those closely identified with local co-operative market development work included a report on "The Growing Influence of the Red Seal Wiring Plan" by R. G. McPhail; "Selling Problems in Red Seal Promotion" by J. S. Bartlett of Milwaukee; "The Application and Operation of the Franklin Plan" by George E. Jaquet of the Society for Electrical Development; "Opportunities in the Small Town League" by J. H. Van Aernam of Albany; "Developing the Industrial Market" by S. S. Vineberg of Buffalo; "Specialized Appliance Campaigns—as Business and Good-Will Builders" by H. W. Ewald, of Pittsburgh; "Has the League a Cash Value?" by G. W. Austen of Toronto, and "Ways and Means of Holding Radio Interests in the

(Continued on page 95)

The SAVOY-PLAZA, New York City
Wired with A-A Red
Architects, McKim, Mead & White
Electrical Contractor,
Walter H. Taverner Corp.
Electrical Engineers, Tenney & Ohmes

When the Engineer Specifies Wire

ON all important jobs, engineers who specify wire are extremely exacting. It is customary to select only those wires which have proved their dependability *in service*.

Such proof is the outstanding reason for the wide popularity of A-A Wire—Code, Red (Intermediate) or Thirty Percent.

A-A WIRE COMPANY
BRANCH OF GENERAL CABLE CORPORATION
Offices

BOSTON	CHICAGO	NEW YORK	DETROIT
SAN FRANCISCO	CINCINNATI	PHILADELPHIA	ST. LOUIS
WASHINGTON, D.C.	ATLANTA	BIRMINGHAM	CHARLOTTE



the Man
up the Ladder
has an easy
time of it
with
IMPROVED
STANDARD LINE
RED SPOT
HANGERS

THREE are three reasons why the IMPROVED Standard "Red Spot" Hangers are easy to install. One reason is that the canopy slides all the way down the chain so the wireman works entirely "in the open." The second reason is that a means is provided for secure and workmanlike hanging under any conditions. The third reason is that exact adjustment is instantly made by a mere turn of a wrench.

So the man up the ladder has an easy time of it.

Experienced installers who have hung hundreds of our units tell us that these new "Red Spots" save an average of fifteen minutes of the workman's time installing. We think that is a little strong; maybe ten minutes would be nearer right. But even ten minutes, at two and one-half cents a minute, is something to think about.

Of course the only way to find out whether these new improved "Red Spots" come up to our brag is to ask your jobber or us for a sample. You might do that now—while you think of it. Write.



Write for Data
Sheet 1300

THE F. W. WAKEFIELD BRASS COMPANY, Vermilion, Ohio, U.S.A.

Suggested RESALE PRICES *for* Wiring Supplies

The prices listed on the following pages are merely suggested resale prices for the commonly used standard supplies and equipment employed in electrical construction work. They are based on average current trade costs throughout the country, very largely obtained from jobbers' price sheets, and are also based on average overhead charges.

* * *

Obviously, prices can be suggested only for the widely used products that are nationally distributed, and under no circumstances is this section intended to function as a directory of products or manufacturers.

* * *

The publishers wish to again emphasize that these are merely *suggested* resale prices and while every effort is made to make them universally applicable and accurate we cannot guarantee them or assume any responsibility for errors.

* * *

The prices appearing in this section will be completely revised each month as trade prices may change.

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Profitable Line

Meet the demand for color in the home by supplying CST Color Plates. Wide variety of colors and finishes at a range of prices to make sales easy and profitable.

Made in all types and gangs up to six as well as any combination style. Lacquer Brass Finish and a new Krinkle Brass Plate are standard as are twenty different colors.

Write for our descriptive booklet covering this line as well as a sample of the new plates, which will be furnished on request.

*and
don't forget*

CST CONDUIT FITTINGS

Locknuts, Bushings, Connectors, Hickeys, Pipe Straps—nearly everything you need—and the CST label insures its quality.

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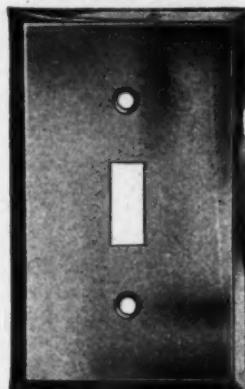
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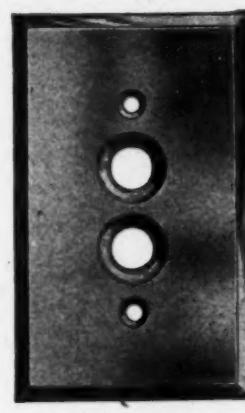
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6400 West 66th Street

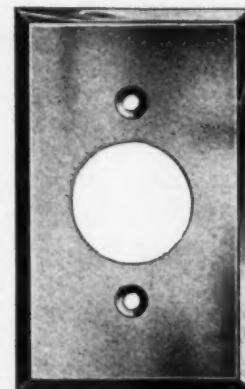
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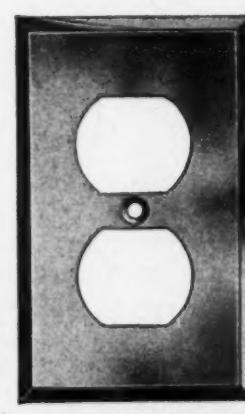
Toggle



Push Button



Single Receptacle



Duplex Receptacle

You Sell Electrical Installations Not Only WIRE!

The thing you sell your customer is a complete electrical installation. Your object in assembling this installation is to sell it at a profit. You are interested therefore, in all material that goes into the job.

Don't consider wire only, install a complete installation that you can sell at a profit. Choose the parts and materials that, when every feature is considered, will make a reputation and show a profit for you.

Quality wire, made by a reputable manufacturer, wire time-tried and tested to give profitable service after the job is completed, that's the wire to choose.

When leading contractors of the country use

American Steel and Wire Company Rubber Covered Electrical Wires

in the nation's largest and most prominent buildings, that is the basis of profit in their choice.

Any of our sales offices will assist with electrical wire problems whenever necessary. Our Electrical Wires and Cables Handbook will be sent free on request.

Consider
the Wire—
the Life of the
Job!

AMERICAN STEEL & WIRE COMPANY

Subsidiary of United States Steel Corporation

SALES OFFICES: CHICAGO NEW YORK BOSTON CLEVELAND WORCESTER PHILADELPHIA PITTSBURGH BUFFALO DETROIT CINCINNATI BALTIMORE
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Export Representatives: UNITED STATES STEEL PRODUCTS CO., 38 Church St., NEW YORK, N. Y.



STEELTUBES [E. M. T.]* has the same inside diameter as heavy conduit. Made in three sizes ($\frac{1}{2}^{\prime\prime}$, $\frac{3}{4}^{\prime\prime}$ and $1^{\prime\prime}$) with diameters and wall thickness shown above. One coupling furnished with each ten-foot length.

10

STEELTUBES Advantages

- 1—Saves thread-cutting
- 2—Bends easily
- 3—Light—handles easily
- 4—Takes any fitting
- 5—Speeds up the job
- 6—Resists corrosion
- 7—Costs less
- 8—Standard price
- 9—Carries Underwriters' Label
- 10—Local stocks always available.

...USE ANY *Standard Fitting*

ONE complete three-purpose coupling is furnished with every ten-foot length of STEELTUBES. This coupling adapts STEELTUBES to any standard threaded or threadless fitting.

... To connect two lengths of STEELTUBES just slip the ends into the coupling and tighten the split bushings.

... For threaded fittings, put the split bushing on the tubing—slip in place and tighten.

... For outlet boxes or cabinets, substitute an ordinary Chase Nipple for one of the bushings.

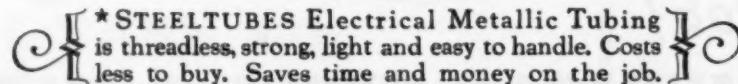
Ask for a sample package, and folder answering your questions about STEELTUBES.

Electrical Division

STEEL AND TUBES, INC.

Cleveland, Ohio

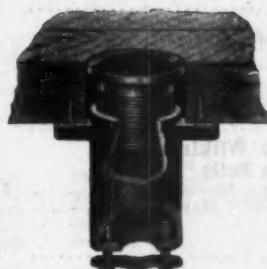
(A subsidiary of Republic Iron & Steel Co.)

 * STEELTUBES Electrical Metallic Tubing is threadless, strong, light and easy to handle. Costs less to buy. Saves time and money on the job.

Steeltubes

IT PAYS TO WRITE US

When You Need
**FLOOR OUTLET BOXES
 JUNCTION BOXES
 CONDUIT BENDERS
 FISH WIRE
 INSULATOR SUPPORTS**



No. 300, Midget Floor Receptacle.



No. 100, Non Adjustable Watertight Floor Box.



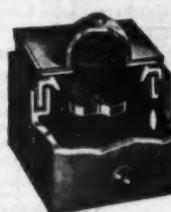
No. 110, Non Adjustable Watertight Receptacle Floor Box.



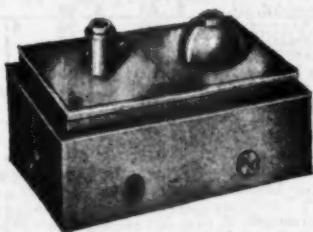
No. 120, Adjustable Watertight Floor Box without Receptacle.



No. 130, Adjustable Watertight Floor Box with T-slot receptacle installed at factory.



No. 231, Square Adjustable Watertight Floor Box.



No. 252, 253, 254, Gang Adjustable Watertight Floor Boxes.

No. 625, Conduit Bender. Bends $\frac{1}{2}$ " or $\frac{3}{4}$ " conduit merely by reversing movable jaw.

Keystone Fish Wire.



"Bull Dog" Insulator Supports.

Fullman Manufacturing Co.

1209-1215 Jefferson St., Latrobe, Pa.

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Mail this coupon today for

FREE COPY NATIONAL ELECTRIC CODE

Firm Name

Address City

Jobber's Name

We are in the market for.....

**F
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THREADED COMPOSITION BUSHINGS										
Size	3/8"	3/4"	5/8"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3 1/2"	
Without Locknut.....	\$.05	\$.11	\$.14	\$.15	\$.20	\$.30	\$.45	\$.85		
With Locknut.....	.09	.15	.18	.24	.30	.45	.77	1.15		
Black Composition.....					3/8"	3/4"	5/8"	1 1/2"		
For Sockets.....					\$.01	\$.02	\$.03	\$.08		

BOXES, FLOOR

NON-ADJUSTABLE TYPE

Full. "Latman" robe"	Rus-	Size	Description	Price
Steel Fullman & City Mfg. Co., Co.	Sell			
477 110	2580		Comp Out. with Std. Rec. & Bell Nozzle	\$3.90
490 100	2590		" " Less Std. Rec. with Stem Nozzle	3.50
490 100	2590		Comp. Out. Less Std. Rec. less Nozzle	2.45
491	....		Comp. Out. with 20A. Polarz. Rec. & Bell Noz.	4.90
499 300	....		Midjet Out. with 10A. Receipt. No Nozzle	2.45
495	....		Square Out. Less Receipt. with Bell Nozzle	4.35
496	....		Square Out. With 15 Amp. Rec. & Bell Nozzle	5.40
497	....		Sq. Out. With 25 A. Rec. & Large Bell Nozzle	8.60

ADJUSTABLE TYPE

400 120	2502	Complete-Shallow Box—Less Receptacle	\$4.35
400	Complete-Deep Box—Less Receptacle	5.25
401	130	Complete-Shallow Box With Receptacle	5.40
401	Complete-Deep Box With Receptacle	6.30
420	Complete Large Size Box Without Receptacle	4.90
421	Complete Large Size Box With Receptacle	6.00

ADJUSTABLE GANG TYPE
Without Receptacle

441 251	2511	Single Gang with 1/2" Cover Plate	\$ 5.40
442 252	2512	Two " " "	10.80
443 253	2513	Three " " "	16.20
444 254	2514	Four " " "	21.60
445	2515	Five " " "	27.00
Extra For 2" Cover Plate, Per Gang			.65
Extra For Special Receptacles Latrobe No. T-208, Each Receptacle			1.00

FLOOR BOXES
Thomas & Betts

No. 100	Complete with Receptacle.....	\$4.00
No. 200	" with Receptacle.....	4.00
No. 1200	Complete without Receptacle.....	2.70
No. 1100	Complete with Receptacle.....	9.00
No. 8000	Utility Outfit with Receptacle.....	.85

BOXES, CUTOUT

TYPE "A" SURFACE CUTOUT BOXES
Black

Width Length.	Short Long	3"	4"	6"	Width Length	Short Long	3"	4"	6"	
Side Side	Deep Deep	Deep Deep	Deep Deep	Side Side	Deep Deep	Deep Deep	Deep Deep	Deep Deep	Deep Deep	
4 1/2 5	\$.55	....	....	....	12 18	....	2.40	\$ 3.75		
4 1/2 9	.60	....	....	....	12 24	....	4.40	5.20		
4 1/2 9 3 1/2	.60	....	....	....	12 30	....	11.40	11.15		
6 6	.65	\$.75	\$ 1.10	15	15	....	2.75	3.80		
6 8	.80	.85	1.35	15	18	....	3.00	4.40		
6 9	.70	.90	1.65	15	24	....	5.25	6.05		
6 10	.75	1.00	....	15	30	....	12.25	14.10		
6 12	.80	1.05	1.80	18	18	....	4.40	5.00		
6 15	.95	1.20	....	18	21	....	9.90	11.50		
8 8	.90	.95	1.60	18	24	....	12.90	12.90		
8 10	1.00	1.05	1.85	18	30	....	13.95	15.30		
8 12	1.10	1.15	2.10	18	36	....	16.65	17.85		
8 15	1.20	1.25	....	18	40	....	17.90	19.55		
8 18	1.35	1.65	....	24	24	....	14.00	15.95		
9 9	.95	1.75	2.10	24	30	....	17.55	19.10		
9 12	1.05	2.00	2.40	24	36	....	20.50	22.10		
10 10	1.10	1.30	2.15	24	40	....	22.30	24.35		
10 12	1.35	1.55	2.45	24	44	....	37.90	41.55		
10 15	1.50	1.65	2.85	30	30	....	24.95	27.20		
10 18	1.60	2.25	3.20	30	36	....	38.10	43.60		
12 12	2.10	1.90	2.75	30	42	....	44.80	48.55		
12 15	2.20	2.10	3.25	30	48	....	51.95	56.20		

For Galvanized Boxes Add 50% to above prices.

BELLS & BUZZERS

Ansonia

Name	No.	Description	Buzzer	2 1/2"	3"	4"	Cow or Sleigh
.....	656	Sgle. Coil Non Adjust.	\$.45	\$.50	....	....	....
.....	657	Dble. Coil Non Adjust.	.50	.55	....	....	....
.....	652	Dble. Coil Round Non Adjust.	.60	.65	....	....	....
Wizard	650	Dble. Coil Non Adjust.	.90	.95	....	....	....
Eureka	641	Dble. Coil Adjust. Class B.....	1.00	1.05	\$ 1.25	\$ 1.60	\$ 1.90
Acme	631	Dble. Coil Adjust. Class A.....	1.35	1.40	1.50	1.85	2.15
Eureka	621	Dble. Wood Box Bell	1.30	1.35	1.45	1.70	1.90
Monitor	658	Round Type	....	1.55	....	....	....
Monitor	661	Round Type	....	1.55	....	....	....
Wizard	660	Comb. Bell & Buzzer	....	1.25	1.35	....	....
Wizard	655	Buzzer Oak Mat	1.75	....	....	....	....
Wizard	666	Watch Case Buzzer	1.30	....	....	....	....
Ansonia	663	Comb. Bell & Buzzer	....	1.00	1.10	....	....

BELLS AND BUZZERS—Continued
Edwards

Name	No.	Size	Description	Price
Nubel	735	2 1/2"	Two Coil Non-Adjust.—Gray Enam. Bell	\$.65
"	736	2 1/2"	" " " " " Buzzer	.60
Dixie	720	2 1/2"	" " " " " Class C Non-Adjust. Bell	.95
"	725	2 1/2"	" " " " " Buzzer	.90
Combell	737	2 1/2"	Two Coil Non-Adjust.—Gray Enam. Bell & Buzz.	
Tubell	738	2 1/2"	Dble. Coil Non-Adjust.—Gray Enam. Two Bells	1.15
Cadet	710	2 1/2"	Two Coil-Class B-Adjust. Bell	1.05
"	715	2 1/2"	" " " " " Buzzer	1.00
"	712	3"	" " " " " Bell	1.25
"	714	4"	" " " " " Bell	1.60
Buz-A-Bell	730	2 1/2"	Two-Coil-Class C Comb. Bell & Buzzer	1.20
Monitor	156	3"	Monitor Bell—Nickel Plated Gong	1.55
Bronx	750	1 1/2"	Nickel Watch Case Buzzer	1.30

Edwards—Lungen

Size	Description	Price
1"		\$2.00
1 1/4"		1.80
2 1/4"		1.90
3"		2.00
4"		2.20
6"		2.40
Cow or Sleigh		2.25

No. 13 Bells

Size	Description	Price
1 1/4" x 1 1/4"	No. 0.	\$1.85
2 1/4" x 2 1/4"	No. 1.	1.60
2 1/2" x 2 1/2"	No. 2.	1.70
3" x 2"	No. 3.	2.00
3 1/2" x 2 1/2"	No. 4.	2.20

Patrick & Wilkins

Iron Box Bells	Price
Small 2 1/2" Iron Box Bell Non-Adj. Dble. Magnet.	.75
Fancy Gong Cow or Sleigh Non-Adj. Dble. Magnet.	1.65
King Monitor Bell	1.65
6" Large Iron Box Bell for Battery Current.	7.30
8" " " " "	10.50

Buzzers

Buzzers	Price
Small Iron Box Buzzer Non-Adj. Dble. Magnet.	.75
Watch Case Buzzer Nickeled.	1.10
Midget Buzzer Nickled.	1.85
Wood Box Buzzer.	2.15
Flush Buzzer with Flush Plate.	3.35

Wood Box Bells

Regular Type	Large Type	Price
2 1/2" Regular.....	6" Regular.....	\$.65
3"	8"	8.00

Bell Push Buttons, Etc.

Brackets for Insulators

BELL PUSH BUTTONS, TREADS, ETC.—Continued

Round Cast		Price
508 & 510	2 1/4" Diam.	\$1.00
511	1 1/4" Loose Back	.95
512	2 1/4" " "	1.00
540	2 1/4" " "	.60
550	2 1/4" " "	.85
570	2 1/4" " "	.75
Other Ansonia Push Buttons, Etc.		
D-33	Desk Push	.75
F-33	Stamped Flush Push	.75
G-33	" Diamond Push	.75
505	Wood Pear Push	.60
521-524	Stamped Push	.75
528 to 534	" "	.95
536-537	" Oblong Push	1.00
541	Oblong for Card	1.25
543	" 2 Point	1.25
544	" For Card	1.20
545	2 Gang Oblong for Cards	1.85
545	3 " " "	2.55
545	4 " " "	3.75
546	Oblong 1 Gang	1.75
547	" 2 "	1.55
548	" Sgle. Gang	.75
549	" " "	1.25
562	Desk Push	.60
577	Diamond Push	.70
578	" " "	.75
Wood Push Button		
Table Clamp No. 571 without Cord, Floor Push or Plug		.90
Floor Push No. 560—Nickel		.75
Under Floor Plate No. 561 Nickel		.90
Combination Floor Pushes Complete No. 573		2.60
Daisy Floor Tread Complete		2.75

Edwards

	Round & Oval Buttons	Price
No. 600	2 1/4" Diam. Round	.25
No. 601	2 1/4" Diam. for Card Round	.40
No. 603	1 1/4" Diam. Round	.25
No. 606	Oval	.30
No. 609	Oval 2 x 4 1/2"	.45
Oblong Push Buttons		
No. 602	2 Gang for Cards	\$1.05
No. 604	Oblong	.40
No. 605	Oblong	.40
No. 607	Single for Cards	.40
No. 608	"	.45

DESK BUTTONS

Edwards

No. 59	5/8" Hole	\$.80	No. 621	5/8" Hole	\$1.45
No. 63	5/8" "	.75	No. 622	5/8" "	1.50
No. 620	5/8" "	.45	No. 625	5/8" "	.50

OTHER BUTTONS

Edwards

No. 235	Floor Plug with Remov. Plug & Extension	\$.85
No. 209	Dixie Floor Tread	1.60
No. 206	Table Clamp	1.10
No. 67	Pendant Dash Oak or Mahogany \$6.65—White	.75
No. 68	Metal Pearl Push	.80

DOOR & WINDOW SPRINGS

Edwards

Number	28	30	30C	32	34	38	39	236
Price	\$1.00	\$1.90	\$1.10	\$1.60	\$4.45	\$5.50	\$8.50	\$1.10

(For Door Openers, See Page PL-20.)

ROUND PUSH BUTTONS

Partrick & Wilkins

Stained Wood Push No. 2		\$0.15
Oak Wood Regular No. 1		.40
Oak Open, Closed & Double Cont. No. 1		.70
Oak Triple Contact No. 1		.90
Cast Brass 1 1/4" Diam. No. 8		.75
Cast Brass 2 1/4" Diam. No. 9		.80
Stamped 1 1/4" Diam. No. 29		.25
Stamped 2 1/4" Diam. No. 27		.25
Stamped Sgle. Card Holder No. 25		.40

DESK TYPE

Partrick & Wilkins

Midget 3/4" Hole, Pearl Center		\$0.85
Desk 5/8" Hole	" "	.40
Mite 5/8" Hole	" "	.70
Multiple 3/4" Hole, Black Center		1.35
Pony Return 3/4" Hole, Black Center		1.85

OBLONG PUSHES

Partrick & Wilkins

No.		Price
16	Cast Brass 4 1/4" x 1 1/4" Screw Cap	\$1.65
31	" 5" x 2 1/2" " "	2.35
44	" 4" x 2" " "	1.45
50	Wrought 4 1/4" x 1 1/2" One Piece	.30
55	" 4" x 2" " "	.35
708	Wrought Push & Speak One Piece	1.35
907	2 Button & Card Holder	2.15
908	" " " "	2.95
909	" " " "	4.55

PEAR SHAPED PUSHES

Partrick & Wilkins

Compound Maple 2 Button		\$2.00
" 3		3.00
No. 3 Solid Maple One Piece		.55
No. 4 Fancy Pear, Two "		.25
Wood Rosettes for above		.40

September, 1929

TABLE AND FLOOR PUSHES AND CLAMPS

Patrick & Wilkins

Improved Table Clamp N. P. Finish		\$0.90
Floor Tread Flat Top		1.10
Combination Foot Push		.80

DOOR & WINDOW SPRINGS

Patrick & Wilkins

No. 1 Door Spring	\$.35	Single Window Spring	\$.75
Make & Break Type	.40	Double " "	.70
Door Trip	.75	Transom Spring	1.50
Closed Circuit Door Spring	.40	Cld. Circuit Window Spr.	.95

COMPOUND OR MULTIPLE PUSHES

Patrick & Wilkins

Style	1 Butt.	2 Butt.	3 Butt.	4 Butt.
No. 3 Wood For Wall Use, Single Row Without Card Holders	\$1.50	\$1.80	\$2.35	\$3.00
No. 4 Wood Same As Above But Weighted For Desk Use	2.60	2.95	3.50	4.25
No. 5 Wood Angle Type Weighted For Desk Use	.....	.....	.....	12.80
No. 10 Wood Base For Wall With Card Holders	3.35	3.75	4.00	.....
No. 12 Wood Base Same As Above But Weighted For Desk Use	4.75	6.00	8.00	.....
No. 3 Wood For Wall Use, Single Row Without Card Holders	\$3.50	\$4.00	\$4.95	.....
No. 4 Wood Same As Above But Weighted For Desk Use	4.95	5.60	6.75	.....
No. 5 Wood Angle Type Weighted For Desk Use	13.75	16.00	\$17.50	.....
No. 10 Wood Base For Wall With Card Holders	4.75	6.00	8.00	.....
No. 12 Wood Base Same As Above But Weighted For Desk Use	6.00	7.50	8.75	.....

MULTIPLE PUSH BUTTONS

Couch "Pushrites"

With Card Holders

Number of Buttons	Plain Base	Wood Base Type	Flush Brass Plate Type
4	7900	\$ 3.35	7940 \$ 5.00
6	740	4.60	789 5.20
8	7910	5.80	7990 6.65
12	7921	8.30	7910 9.60
16	7930	10.80	7902 12.45
20	793	13.30	797 15.40

COUCH UNMOUNTED PUSH BUTTONS "WORKRITES"

No. 97 for 1/2" Hole \$0.50

Adaptor No. 0684 for same .05

BRACKETS FOR INSULATORS

WOOD BRACKETS

Peirce

1 1/4" x 2" x 10"	Each	1 1/4" x 2" x 12"	Each
.10		.11	
.10		.12	
.10		.12	

PINS

Locust 1 1/4" x 8" Each .10

Oak 1 1/4" x 8" .05

HOUSE BRACKETS WITHOUT INSULATORS

Peirce

No.	Light Type Points	Heavy Type Points	Corner Type Points
153	One	.25	154 One
258	Two	.60	254 Two
353	Three	.95	354 Three

WIREHOLDERS WITH INSULATORS

Peirce

No.	Wires	Spacing	Price
1607	1	6 1/2	.25
190	2	12 1/2	.30
296	2	6	.60
394	3	9	.65
395	3	4 1/2	.85

HOUSE RACKS WITH INSULATORS

Peirce

No.	Wires	Length	Space	Price
123	1	6 1/2	0	.45
286	2	12 1/2	6	.90
383	3	12 1/2	3	.95
386	3	18 1/2	6	1.25

HOUSE BRACKETS WITHOUT INSULATORS
 National Elec. Products

Light Type			Heavy Type			Corner Type		
No.	Points	Price Each	No.	Points	Price Each	No.	Points	Price Each
108-10	1	\$.25	109-10	1	\$.40	111-10	1	\$.30
108-20	2	.00	109-20	2	.80	111-20	2	.60
108-29	2	.65	109-29	2	.85	111-29	2	.65
108-36	3	.95	109-36	3	1.20	111-36	3	.85

HOUSE RACKS WITH INSULATORS
 National Elec. Products

No.	Light Type	Length	Each	No.	Heavy Type	Length	Each
104-10	1	5 1/2"	\$.40	101-24	2	6 1/2"	\$1.15
104-26	2	11 1/2"	.85	101-28	"	13 1/2"	1.70
104-33	3	11 1/2"	1.00	101-34	3	13 1/2"	1.80
104-36	"	18	1.25	101-38	"	21 1/2"	2.35
104-53	5	18	1.65	101-44	4	17 1/2"	2.20
104	Insulator Only		.10	101	Insulator Only		.20

WIREHOLDER ACCESSORIES

National Elec. Products

No. 5000 Corner Chair....	\$.13	No. 5040 Break Arm Strap....	\$.14
No. 5020 Insulator.....	.18	No. 5051 " " Bolt.....	.20
No. 5021 U Bolts & Nuts..	.10	No. 5052 T Head Screw.....	.03

SINGLE POINT WIREHOLDERS
 National Elec. Products

No.	No.	No.	No.
5211.....	\$.25	5311....	\$.20
5214.....	.35	5314....	.30
5215.....	.45	5315....	.35

WIREHOLDERS WITH INSULATORS

National Elec. Products

For One Wire	For Two Wires	For Three Wires	
No.	Each	No.	Each
No. 5011.....	\$.30	No. 5002.....	\$.60
No. 5001.....	.25	No. 5012.....	.60

WIREHOLDERS WITH INSULATORS

National Elec. Products

No.	Light Type	Length	Each	No.	Heavy Type	Length	Each
105-1X	1	6"	\$.30	106-1	1	6"	\$.60
105-1	1	6"	.30	106-1	1	6"	.65
105-10	1	10 1/2"	.30	106-10	1	6"	.65
105-26	2	10 1/2"	.60	106-26	2	11 1/2"	1.30
105-29	2	13 1/2"	.60	106-29	2	14 1/2"	1.35
105-34	3	13 1/2"	.85	106-36	3	17 1/2"	1.90
105-36	3	16 1/2"	.90	106-36X	3	17 1/2"	1.05
105	Insulator Only		.18	106	Insulator Only		.20

B-SUNDRIES, BOLTS, ETC.
CARRIAGE BOLTS

Galvanized

Diam.	Length	Length	Length	Length	Length	Length
3/8" Diam. Each..	\$.05	\$.05	\$.05	\$.06	\$.07	\$.07
5/8" " " ..	.08	.09	.10	.11	.12	.13

MACHINE BOLTS WITHOUT WASHERS

Galvanized

Diam.	Length						
3/8" Each.....	\$.05	\$.06	\$.07	\$.08	\$.08	\$.10	\$.12
5/8" " " ..	.08	.09	.10	.11	.12	.13	.15
3/4" " " ..	.12	.13	.14	.15	.16	.17	.19
7/8" " " ..	.15	.16	.17	.19	.20	.22	.25

STOVE BOLTS

Round or Flat Head

Length	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Up to 1"	Length	1/4"	1/4"	1/4"	1/4"	1/4"
1 1/4" to 1 1/2"	Long Per Dozen.....	\$.10	\$.10	\$.12	\$.15	\$.20
1 1/4" to 2"	" "	.10	.10	.12	.20	.30
2" to 3"	" "	.10	.12	.15	.25	.35
3" to 4"	" "	... .25	.30	.35	.40	.45

TOGGLE BOLTS, STEEL

"Paine"

Size—Diameter	2"	3"	3 1/2"	4"	5"	6"
5/16" Long Price Each.....	\$.10	\$.10	\$.10	\$.10	... .10	... .10
3/8" " " ..	.10	.10	.10	.10	.11	.12
7/16" " " ..	.10	.10	.10	.10	.11	.13
1/2" " " ..	.11	.11	.12	.12	.13	.15
5/8" " " ..	.13	.13	.14	.14	.14	.15

NOTE: For Brass Toggle Bolts—2 1/2 times above prices.

ROUND FIXTURE BLOCKS
 Solid Half or Full Plowed

3" x 4" Round	4 x 5" Round	5 x 6" Round
\$.12	\$.15	\$.18

Ceiling Button—P & S Porcelain No. 170—Each.....

Switch Bases—See Snap Switches Page PL-19.

CORDS, FIXTURE, LAMP AND HEATER
SINGLE FIXTURE CORD

Single Lamp Cord	Price Per Foot
Type No. 18	No. 16 No. 14 No. 12
Single Cotton Covered Cord—Light F-64	\$.01 \$.02 \$.02 1/2
Single Cotton Covered Cord—Heavy F-32	.01 1/2 .02 .03 \$.04
Single Artificial Silk Cord—Heavy F-32	.02 .03 .04 ...

DOUBLE LAMP CORD

Regular Lamp Cord	Price Per Foot
Type No. 18	No. 16 No. 14 No. 12
Cotton Covered Twisted Pair.....	C \$.02 1/2 \$.04 \$.06 \$.08
" Parallel Pair.....	PO .03 1/2 .05 .08 ...
" Twisted Parallel Pair.....	PD .04 .05 ...
Artificial Silk Twisted Pair.....	C .03 1/2 .05 .08 ...
" Parallel Pair.....	PO .04 .06 ...

REINFORCED CORD

Not Asbestos	Type	No. 18	No. 16	No. 14	No. 12
Cotton Covered Light Type 1/4" PS	PS	\$.04	\$.05	\$.08	
" Heavy 1/4" P	P	.05	.07	.09	\$.13
Weatherproof Light Type 1/4" PSWP	PSWP	.04	.06		
" Heavy Type 1/4" PW	PW	.05	.06	.09	

HEAVY DUTY PORTABLE CORD

"Duracord" or Similar. Extra Reinforced

Type PS Light 3 Cond. Port. Cord..	No. 18	No. 16	No. 14	No. 12	No. 10
" P Heavy 2 "	"	".14	\$.17	\$.21	\$.25
" P " 3 "	"	"	.18	.25	.33

ALL RUBBER CORD

"Tirex" "Royal" "Super" "Indestructo" or Similar	Price Per Foot
SJ Junior 2 Conductor Black.....	\$.08
" 2 " Green.....	.10
" 3 " Black.....	.13
S Type Heavy 2 Conductor Black..	.13
" 3 " " " ..	.19
" 4 " " " ..	.22
" 4 " " " ..	.20
" Sgle. Cond. Black..	.08

HEATER CORD

Asbestos Covered	No. 18	No. 17	No. 16	No. 14	No. 12	No. 10
Stand. Twisted or Wound Asbest. 1/4"	\$.05	\$.06	\$.06	\$.10	\$.12	\$.18
American Beauty Heater Cord.....	.09	.09	.09	.12	.12	.21
Rockbestos Heater Cord.....	.07	.07 1/2	.08	.10	.10	.20

"Delabeston" Heater Cord	No. 18	No. 17	No. 16	No. 14	No. 12	No. 10

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PL-10

Cord & Wire Connectors

Fuses

SET SCREW CONNECTORS

Round Brass

	Wire Size	No. 12-14	No. 10	No. 8	No. 6	No. 4
Divided Wall	2 Screws	\$.10	\$.12	\$.13	\$.14	\$.19
" " "	4 "	... .15	.16	.17	.24	
Hole Thru	2 "	... .14	.16	.18	.20	.22
" " "	4 "	... .14	... .16	... .18	... .20	.25
	Wire Size	No. 2	No. 1/0	No. 2/0	No. 3/0	No. 4/0
Divided Wall	2 Screws	\$.20	... .20	... .20	... .20	... .20
" " "	4 "	... .28	\$.35	\$.42	\$.70	\$.95
Hole Thru	2 "	... .30	.36	... .36	... .36	
" " "	4 "	... .34	.38	.55	.70	.95

DOSSERT SOLDERLESS CONNECTORS

Size of Conductor	Up to No. 4	3 to No. 1	No. 0	No. 2/0	No. 3/0	No. 4/0
2 Way S & Elbows.	\$.65	\$.75	\$.80	\$ 1.00	\$ 1.20	\$ 1.40
Cable Taps.	1.00	1.10	1.20	1.40	1.75	2.10
3 Way S & Y's.	1.00	1.10	1.20	1.40	1.75	2.10
Lugs—All Types.	.50	.60	.60	.70	.90	1.10

CORD & MOTOR CONNECTORS

Complete Body Only Cap Only

Arrow	No.	Price	Body Only	Cap Only	Price
Midget Comp.	8238	\$.50	... .50	... .50	... .50
" Arrolite	8239	.65	... .65	... .65	... .65
Motor Conn.	RP-8221	.55	8221	\$.50	RP
" "	RL-8221	.65	8221	.50	RL
" "	RA-8222	.55	8222	.50	RA
" "	RM-8222	.70	8222	.50	RM
" "	TM-8222	.70	8222	.50	TM
" "	RH-8224	.90	8224	.65	RH
" "	RG-8281	.90	8281	.65	RG
" "	8330 to 33	.80	... .80	... .80	... .80
" "	8334 to 37	.90	... .90	... .90	... .90
Bryant					
Motor Conn.	KR-130	.60	130	.45	KR
" "	KG-103	.60	103	.45	KG
" "	KT-130	.55	130	.45	KT
Hubbell					
Cord Connector	5894	.60	5574	.45	5896
" "	6116	.55	6118	.45	5964
" "	6179	.60	6630	.45	6631
" "	6180	.55	6630	.45	6181
" "	5518	.60	5574	.45	5420
" "	7083	1.30	7084	.85	7056
" "	7090	1.80	7091	1.10	7092
" "	6408	1.25	6409	.90	6149
Weber					
Cord Connector	2274	.60	.74	.45	2200
Wirt					
Cord Connector	.56	.55			

NOTE: For Attachment Plugs and other caps—See Pages PL-16 & PL-17.

E-SUNDRIES

EXTENSION CORDS—MADE UP

With Attachment Plug & Socket, but Guards-Lamps & Handles Extra

Length in Feet	With Lamp Cord and Key Socket No. 18 Twisted	With Reinforced Cord and Key Socket No. 18		With Artificial Silk Cord and Key Socket Twist. or Paral. No. 18	
		Light	Heavy	Light	Heavy
4 Foot.	\$.95	\$ 1.05	\$ 1.10	\$ 1.00	\$ 1.10
6 "	1.00	1.15	1.20	1.10	1.20
8 "	1.05	1.25	1.30	1.20	1.30
10 "	1.10	1.35	1.40	1.30	1.40
12 "	1.15	1.45	1.50	1.40	1.50
14 "	1.20	1.55	1.60	1.50	1.60
16 "	1.25	1.65	1.70	1.60	1.70
18 "	1.30	1.75	1.80	1.70	1.80
20 "	1.35	1.85	1.90	1.80	1.90
22 "	1.40	1.95	2.00	1.90	2.00
24 "	1.45	2.05	2.10	2.00	2.10
With All Rubber Cord and Weatherproof Socket					
4 Foot.	No. 18	No. 16	No. 18	No. 16	
"	\$ 1.25	\$ 1.40	\$ 1.45	\$ 1.55	
"	1.45	1.65	1.75	1.85	
"	1.65	1.90	2.05	2.15	
"	1.85	2.15	2.35	2.45	
"	2.05	2.40	2.65	2.75	
"	2.25	2.65	2.95	3.05	
"	2.45	2.90	3.25	3.35	
"	2.65	3.15	3.55	3.65	
"	2.85	3.40	3.85	3.95	
"	3.05	3.65	4.15	4.25	
"	3.25	3.90	4.45	4.55	

ELBOWS & BENDS For Rigid Conduit

Size	3/4"	4"	1"	1 1/4"	1 1/2"
Black	\$.15	\$.19	\$.28	\$.39	\$.52
Galv.	.17	.22	.32	.43	.58

Size	2"	2 1/2"	3"	3 1/2"	4"
Black	\$.83	\$ 1.35	\$ 3.63	\$ 8.00	\$ 9.25
Galv.	.96	1.55	4.13	9.13	10.52

EXPANSION SHIELDS & ANCHORS

Ackerman-Johnson—Dryvin—Star—Diamond—Cinch—Pactite or Similar

Size of Hole	These Prices Do Not Include Screws.				
	Length In Inches	Inside Diameter	Takes	Screw No.	Price Each
1/4" to 1 1/4"	1/4"	1/4"	5-6-7		\$.05
" " "	1 1/4" & 1 1/2"	1/4"	5-6-7		.06
" " "	1 1/2"	1/4"	8-9-10-11		.08
" " "	1 1/4"-1"	1/4"	8-9-10-11		.06
" " "	1 1/4"	1/4"	8-9-10-11		.08
" " "	2"	1/4"	8-9-10-11		.11
" " "	2 1/2"	1/4"	12-13-14		.06
" " "	2 1/2"-3"	1/4"	12-13-14		.11
" " "	3"	1/4"	12-13-14		.13
" " "	Up to 1"	1/4"	15 to 18		.08
" " "	1 1/4"	1/4"	15 to 18		.11
" " "	2"	1/4"	15 to 18		.14
" " "	To 1 1/2"	1/4"	15 to 18		.11
" " "	2 1/4"	1/4"	15 to 18		.20

LAG SCREW ANCHORS (Diamond or Smaller)

Takes Lag Screw	1/4"	1/4"	1/4"	1/4"	1/4"
Price Without Lag Screw	\$.14	\$.14	\$.17	\$.24	\$.36
Takes Lag Screw					
Price Without Lag Screw		\$.42	\$.62	\$.90	\$ 1.05

FUSES

PLUG FUSES

Standard Plug Fuses—Any Make—\$.07 each or 5 for \$.25
(Some Manufacturers put these fuses up 4 in a box, in which case they should be retailed at 4 for \$.25.)

ENCLOSED FUSES, NON-RENEWABLE

Amps.	Non-Indicating Price Each		Indicating Price Each	
	250 Volts	600 Volts	250 Volts	600 Volts
1 to 30	\$.10	\$.30	\$.20	\$.40
35 to 60	.20	.40	.33	.65
70 to 100	.60	1.10	.95	1.75
110 to 200	1.20	1.85	1.85	2.90
225 to 400	2.15	4.10	3.35	6.35
450 to 600	4.10	6.00	6.35	9.25
650 to 800	8.95	11.00	13.85	17.35

RENEWABLE FUSES

Fuses Links

Amps.	250 Volts	600 Volts	250 Volts	600 Volts
1 to 30	\$.50	\$ 1.10	\$.03	\$.05
35 to 60	1.00	2.25	.05	.06
65 to 100	2.00	3.00	.10	.10
110 to 200	4.00	5.00	.15	.15
225 to 400	7.50	11.00	.30	.30
450 to 600	11.00	16.00	.60	.60

FUSE WIRE

Size in Amps.	3	5	6	10	15
Price Per Pound	\$ 1.95	\$ 1.50	\$ 1.50	\$ 1.30	\$ 1.30
Price Per Foot	.01	.0134	.02	.0234	.03
Size in Amps.	20	25	30	40	50
Price Per Pound	\$ 1.00	\$ 1.00	\$ 1.00	\$ 1.00	\$ 1.00
Price Per Foot	.04	.05	.07	.08</	

Fittings, Conduit

FITTINGS, CONDUIT, THREADED

STANDARD TYPES, COVERS EXTRA							
"Condulets" "Taplets" "Unilets" "V. V." "Electrolets"							
"Powerlets" "Adaptilets" Etc.							
Type	1/4"	3/8"	1"	1 1/4"	1 1/2"	2"	3"
A 1-Piece	\$.33	\$.44	\$.60	\$.87	\$1.12		
B "	.40	.50	.70	1.12	1.47		
B "				1.75	2.10		
BE "		1.05	1.55	2.38	3.15		
C 1-		.57	.88	1.32	1.71		
CO "		.70	.81	1.05	1.75	2.35	
D "		.48	.58	.80	1.82	1.71	
E "		.40	.50	.70	1.12	1.46	
F 2-							
LB-LF-LL-LR							
LBB-LFB-LLB-LRB							
LBL-LBR-LU-LUA							
T All One Size							
TA All One Size							
TB-TL-TR							
U-UB-UF							
X All One Size							
Gaskets							
Reducers							
Unions							
Type	2"	3 1/2"	3"	3 1/2"	4"		
A 1-Piece	\$2.32	\$5.46	\$6.50	\$10.00	\$11.70		
B "	3.00	5.46	6.50	10.00	11.70		
B 2-		3.65	5.46	7.30	9.10	16.65	
BE "		5.45	10.00	11.70	19.90	22.10	
CO "		3.40	5.24	8.10	11.70	14.30	
D "		4.46	6.75	10.27	16.38	17.95	
E "		3.40	6.24	8.10	11.70	14.30	
F 2-							
LB-LF-LL-LR							
LBB-LFB-LLB-LRB							
LBL-LBR-LU-LUA							
T All One Size							
TA All One Size							
TB-TL-TR							
U-UB-UF							
X All One Size							
Gaskets							
Reducers							
Unions							

NOTE: For Special Prices on Types F&LB Entrance Fittings See Page PL-13.

COVERS
For Above

	1/4"	3/8"	1"	1 1/4"	
Sheet Steel Blank Met. Cover	\$.11	\$.15	\$.33	\$.45	
Cast-Iron	.21	.31	.59	.70	
Porcelain with Holes	.14	.22	.35	.51	
Metal with 1/4 Nipple	.28	.35	.59	.65	
" " 1/4 "	.33	.40	.54	.70	
" " 1/4 "	.35	.42	.56	.78	
Porcelain with 1/4 Nipple	.35	.42	.60	.82	
" " 1/4 "	.42	.49	.67	.88	
" " 1/4 "	.49	.57	.74	.95	
Porcelain for Drop Cord	.49	.56	.70		
Porcelain Weatherproof Sockets	.22	.35	.56		
Composition with Holes	.28	.42	.70	1.40	
Composition Split with Holes	.56	.84	1.40	2.80	
	1 1/2"	2"	2 1/2 & 2"	3 1/4 & 4"	
Sheet Steel Blank Met. Cover	\$.63	\$.79	\$1.05	\$1.12	
Cast Iron	.98	1.26	1.61	1.75	
Porcelain with Holes	.67	.84	1.12	1.26	
Metal with 1/4 Nipple	.82				
" " 1/4 "	.86				
Porcelain with 1/4 Nipple	1.01				
" " 1/4 "	1.08				
" " 1/4 "	1.16				
Porcelain for Drop Cord					
Porcelain Weatherproof Sockets	1.55	1.68			
Composition with Holes	2.10	3.36			
Composition Split with Holes					

RECEPTACLES & ROSETTES

For Above

(For Description See Crouse Hinds' Catalog)	1/4"	3/8"	1"	
Lamp Receptacle without Shade Holder Groove	\$.35	\$.42	\$.50	
" with Shade Holder Groove	.42	.50	.56	
Fixture Rosette with 1/4 or 3/8 Nipple—Male or Female	.56	.63	.70	
Cord Rosette with One Outlet	.42	.50	.56	
" " Two Outlets	.50	.56	.63	
Polarity Plug Receptacle for Hubbell 6 Amp	.56	.63	.70	
" " 20 "	.77	.85	.91	
Attachment Plug Receptacle for Hubbell 6 Amp	.56	.63	.70	

FS SERIES FOR FLUSH DEVICES

Shallow Type Without Covers, Any Make

No. Gangs	No. Pipe Outlets	Series	1/4"	3/8"	1"
Single Gang	One	FS-FSA	\$.91	\$1.06	\$1.19
	Two	FSC-FSL-FSR-FSAA	1.05	1.26	1.54
" "	Three	FSCA-FSCC-FSCT-FST	1.40	1.75	2.03
" "	Four	FSX-FSCD	1.68	2.10	2.38
Two Gang	One	FS-FSA	1.68	1.82	1.96
" "	Two	FSC	1.82	1.96	2.17
" "	Three	FSD	2.03	2.17	2.31

FS SERIES FOR FLUSH DEVICES—Continued

No. Gangs	No. Pipe Outlets	Series	1/4"	3/8"	1"
2 Gang Tandem	One	FS	\$.91	2.45	2.50
" "	Two	FSC	2.45	2.50	2.73
Three Gang	One	FS-FSA		2.53	2.73
" "	Two	FSC		2.66	2.87
Four Gang	One	FS-FSA		3.08	3.36
" "	Two	FSC-FSSE		3.29	3.50
" "	Five	FSD	3.44	4.00	4.34

COVERS FOR FS FITTINGS

Description	Single Gang	2 Gang
Metal Cover for Std. Flush Push Switches	\$.21	\$.42
" " " Tumbler or Toggle Switches	.21	.42
" " " Rotary Switches	.21	.42
Metal Cover for Single Flush Receptacle	.21	.42
" " " Duplex Flush Receptacle	.49	.84
" " " with Lift Cover	.84	1.68
" " " for Disapp. Door Receptacle	1.12	2.24
" " " with 1/4 Metal Nipple	.40	
" " " " "	.54	
Blank Metal Cover Sheet Steel	.14	.26
" " " Cast-Iron	.55	.70
Porcelain Cover with Holes	.28	
Cast Cover with Guard for Push Switches	.49	.81
Description	3 Gang	4 Gang
Metal Cover for Std. Flush Push Switches	\$.63	\$.84
" " " Tumbler or Toggle Switches	.63	.84
" " " Rotary Switches	.63	.84
" " " Single Flush Receptacle	.63	.84
" " " Duplex Flush Receptacle	.89	1.86
" " " with Lift Cover	2.89	3.86
" " " for Disapp. Door Receptacle		
" " " with 1/4 Metal Nipple		
Blank Metal Cover Sheet Steel	.56	.84
" " " Cast-Iron	1.05	1.40
Porcelain Cover with Holes		
Cast Cover with Guard for Push Switches	1.40	1.96

METAL COMBINATION PLATES FOR FS SERIES

2 Gang for One Switch and one Sgle. or Duplex Receptacle			8.70
2 " " " " " Bull's Eye with Ruby Glass			1.75
3 " " " " " One Receptacle & one Bull's Eye			1.96

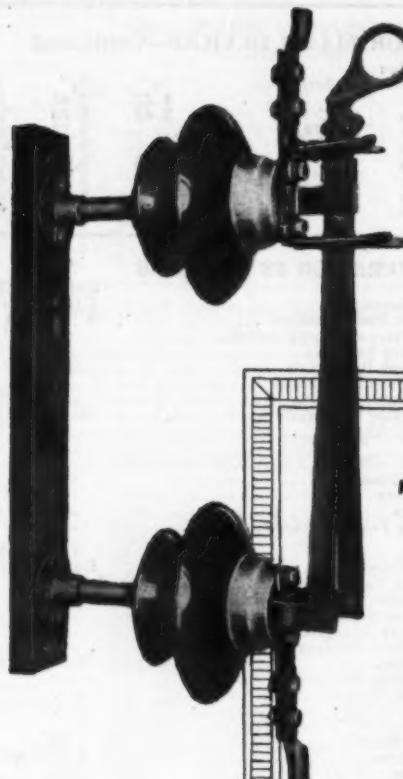
NOTE: Although our prices on conduit fittings apply to all makes we use Crouse Hinds' numbers and lists for convenience.

G & H WITHOUT ADJUSTABLE BAR

Type	Crouse Hinds or Similar	5 Amp.	10 Amp.
G.		\$.90	\$.91
GL		.63	.77
GA-GLA-GT		.64	.98
GTA-GX		1.05	1.19
H.		.42	.56
HA		.49	.63
HH		.66	.70
HHC		.84	.98
HLA		.63	.77
Type	Crouse Hinds or Similar	20 Amp.	
G.		.90	\$1.05
GL		1.05	1.19
GA-GLA-GT		1.26	1.40
GTA-GX		1.50	1.68
H.		.84	.91
HA		.91	.96
HH		.77	1.05
HHC		1.26	1.40
HLA		1.05	1.19

G & H WITH ADJUSTABLE BAR

Type	Crouse Hinds or Similar	5 Amp.	10 Amp.
G.		\$1.26	\$1.33
GL		1.33	1.50
GA-GLA-GT		1.54	1.68
GTA-GX		1.75	1.96
H.		1.12	1.19
HA		1.19	1.26
HH		1.26	1.33
HHC		1.54	1.68
HLA		1.33	1.50



Positive in operation

Type FA-1 hook-operated disconnecting switches

IN THE Type FA-1 hook-operated disconnecting switch for outdoor service, the blade latch locks the blade closed despite all electromagnetic forces acting to open it.

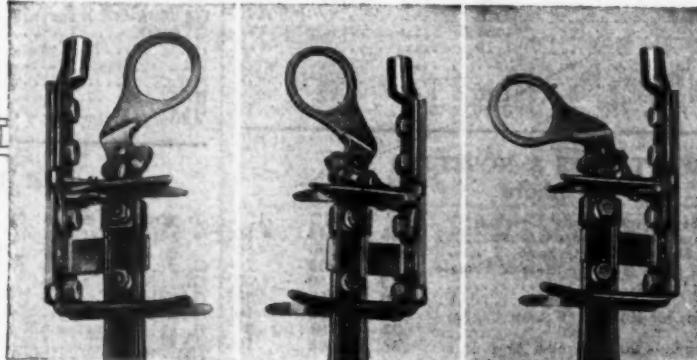
An opening device, embodying an offset eye, permits operation of the switch from a point directly beneath. The eye is of large diameter for ease of hook insertion. A seal-break on the opening device overcomes any sealing-in tendency of the blade.

Additional advantages are:

- Absence of soldered parts*
- Tongue-type contact*
- Large break distance*
- Standard interchangeable insulators*

Type FA-1 blades are of truss construction to afford maximum mechanical strength for switches of all ratings. They are made from hard-drawn channel-section switch copper.

For a detailed description of Type FA-1 disconnecting switches, write to the nearest G-E office for a copy of publication GEA-1004.



GENERAL ELECTRIC 500-30
GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES



The New BROADWAY TEMPLE NEW YORK CITY

Towering majestically from the heart of New York's famed "great white way" is the new Broadway Temple—a magnificent monument to Christendom built to last and to perpetuate the ideals of Christianity in a great city.

Permanence was one of the major considerations of the architects and builders—Only the finest and most enduring equipment and materials were used. Among these was the installation of nine carloads of—



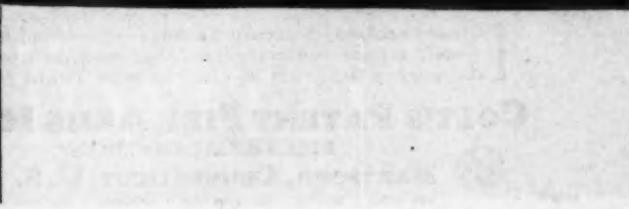
CENTRAL CONDUIT

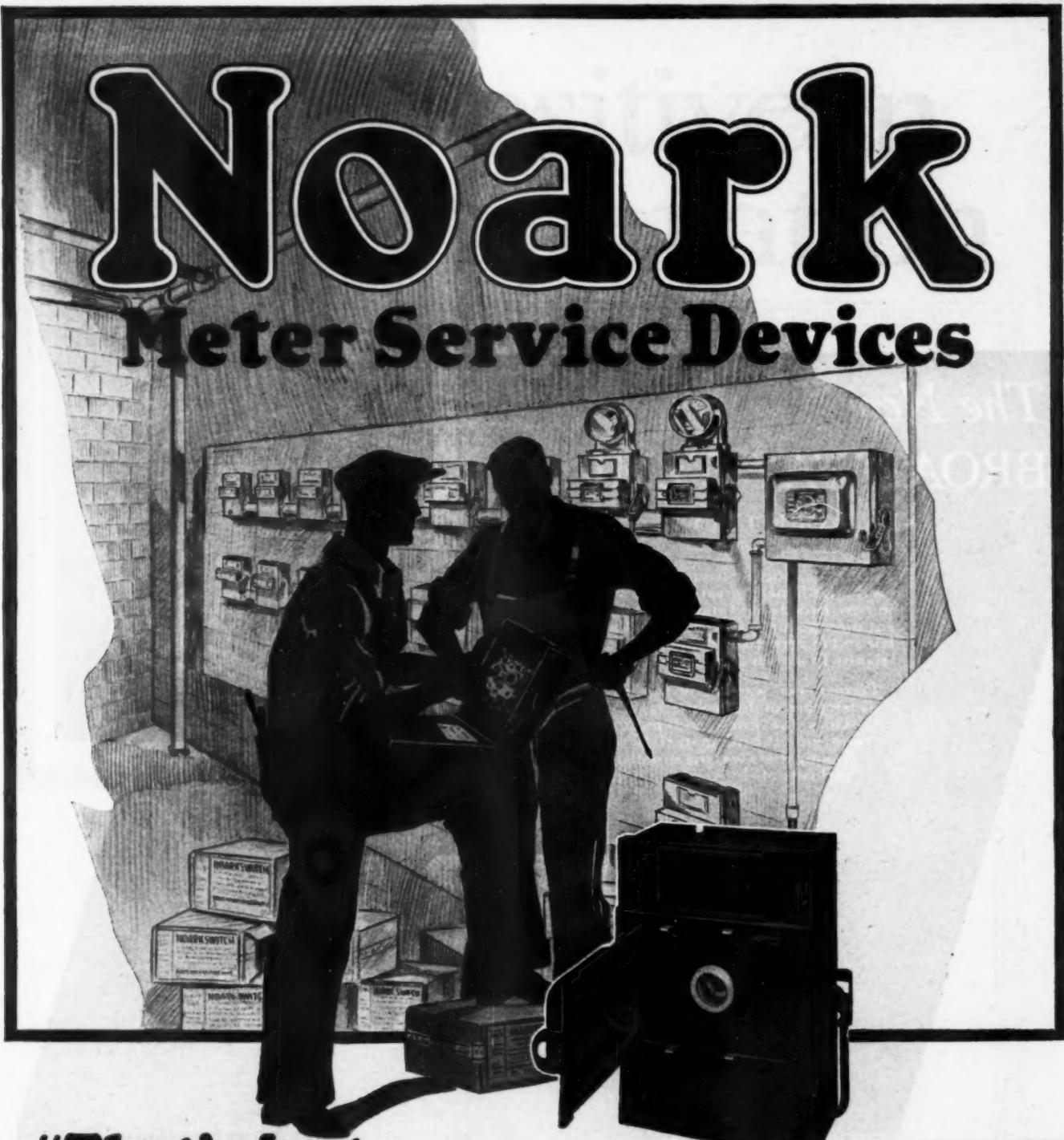
a distinct tribute to the high quality and dependability of this super-galvanized conduit.

Central Tube Company
PITTSBURGH

Voorhees, Gmelin & Walker, New York
Architects

Hegeman & Lyons, New York
Electrical Contractors





"That's just what the boss says

He'd rather pay a few cents more for these Noark Switches than have us waste a lot of time trying to make a good job with cheap boxes. He fell for that 'low price' argument once—back when he first began contracting—but never again!

Noark's the only name he can think of when making up an order for meter service switches. And why?

{ Clean knockouts—accurate fittings—good binding screws
—well tapped contacts—plenty of room to work—and
the wiring diagram so clear a baby could follow it }

COLT'S PATENT FIRE ARMS MFG. CO.
ELECTRICAL DIVISION



HARTFORD, CONNECTICUT, U. S. A.

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For accessible fusing

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For sealed service and accessible load-side fusing. In 30 ampere capacity only. Provisions for up to four branch circuits in same cabinet.

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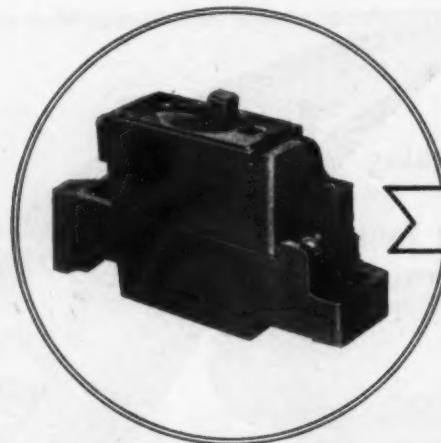
THE MARTELE MODERNIZER

FOR THE HOME

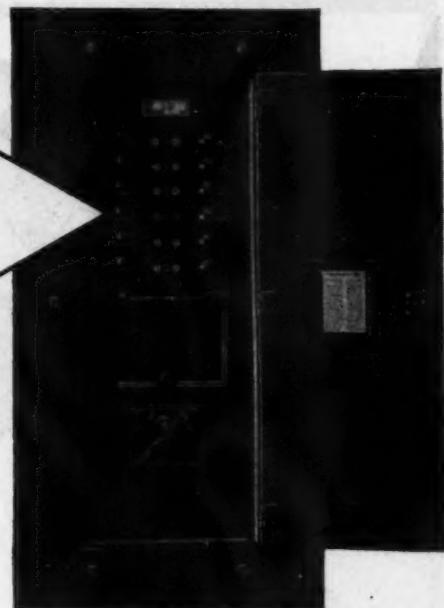
THE ONLY, COMPLETE, PACKED, READY TO HANG
UNIT ON THE MARKET
DESIGNED IN THE MODERN
STYLE

CONSOLIDATED

LAMP & GLASS COMPANY, CORAOPOLIS, PA.



This Circuit-Breaker



Protects your Wiring

THE circuit-breakers controlling the branch circuits of the Westinghouse Nofuz panelboard are your greatest assurance of freedom from wiring troubles after installation.

The calibration of this breaker cannot be changed; therefore, it prevents unthinking persons from destroying the protective features of the panelboard. Then, too, the breaker trips free from the handle,

making it impossible to hold the breaker closed against an abnormal overload.

The time and labor-saving devices that make all Westinghouse panelboards easy to install are included in this new lighting control.

Complete information about the Nofuz panelboard may be obtained from the nearest Westinghouse sales office.

WESTINGHOUSE ELECTRIC & MFG. COMPANY
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SALES OFFICES AND SERVICE SHOPS IN ALL PRINCIPAL CITIES OF THE UNITED STATES



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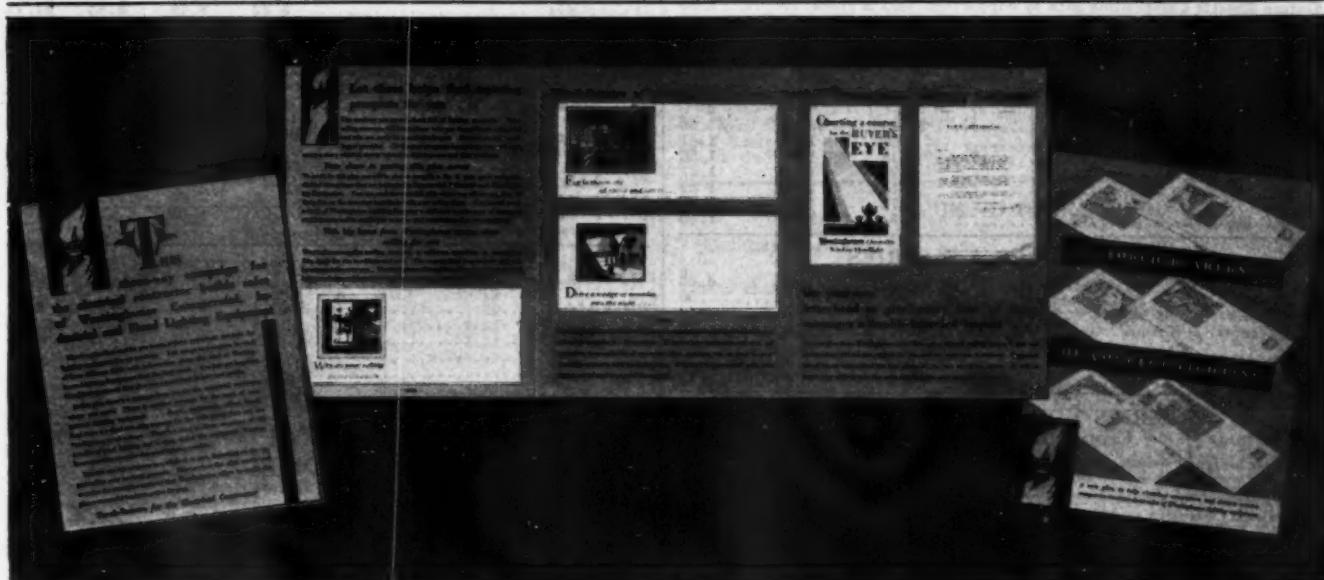


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Water Heaters

Torch-bearers of Correct Lighting and torch-bearers of bigger lighting sales for you



These torch-bearers of Correct Lighting are waiting to show you the way to a bigger volume of lighting sales and profits with Westinghouse Lighting Equipment. They can help you develop lighting business in your territory. They can put you in touch with lighting prospects of the kind that use lighting equipment in a volume that means good business and good profits for you.

There are sales-helps in this Torch-Bearer Plan to help you sell industrial lighting, commercial lighting and floodlighting equipment. There are arresting messages that tell your prospects of the benefits of good lighting and of the Westinghouse equipment that makes this good lighting possible.

And remember that this plan is

backed by equipment with the merit and acknowledged selling features that are found in Westinghouse Lighting Equipment. Picture the possibilities that a plan of this kind offers you. It will help you to sell Westinghouse Sollex, Sollaire and Sollite Luminaires, Westinghouse RLM Reflectors, Glassteel Diffusers and other industrial lighting equipment and Westinghouse Chromilite Floodlights.

Westinghouse Agent-Jobber Representatives can explain this plan to you, show you the attractive material that is a part of it and tell you how you can enjoy its benefits. Ask for this help.

WESTINGHOUSE ELECTRIC & MFG. COMPANY
Commercial Lighting Section
South Bend, Indiana



Westinghouse

PL-12

Fittings, Conduit

Fittings, Conduit

COVERS FOR G & H SERIES

	Without Adjustable Bar	With Adjustable Bar	Without Adjustable Bar	With Adjustable Bar		
	5 Amp.	10 Amp.	20 Amp.	5 Amp.	10 Amp.	20 Amp.
Porcelain	\$.28	\$.35	\$.56	\$.21	\$.21	\$.49
Blank Metal	.21	.28	.35	.14	.14	.35
Porcelain with $\frac{1}{2}$ " Nip.	.42	.49	.70	.35	.35	.63
" " "	.49	.56	.77	.42	.42	.70
Metal	.56	.63	.91	.49	.49	.84
" " "	.35	.42	.49	.28	.28	.42
" " "	.42	.49	.56	.35	.35	.49
" " "	.49	.56	.63	.42	.42	.56

DEVICES FOR G & H SERIES

(See Page 51 Crouse Hinds Catalog No. 2000)

	Price Each
Lamp Receptacle with Shade Holder Groove No. H546	\$.70
Fixture Rosette Porcelain with $\frac{1}{2}$ " Nipple No. H549 & H548	.77
" " " " " No. H551 & H552	.91
Fixture Rosette Composition with $\frac{1}{2}$ " Nipple No. H571 & H572	1.05
Cord Rosette Porcelain H553	.60
" " " Composition H554	.70
Lamp Receptacle—One Piece—No. H556 or 557	.35

J & K SERIES WEATHERPROOF

	$\frac{1}{2}"$	$\frac{3}{4}"$	$1"$	
J-A-JB-JU	\$.84	\$ 1.05	\$ 1.50	
JL	.98	1.19	1.61	
JT	1.19	1.33	1.50	
JX	1.33	1.50	1.61	
K	1.50	1.61	1.82	
KA-KB-KC-KD	.70	.91	1.23	
	.84	1.05	1.50	

DEVICES FOR J K SERIES

	Price
Lamp Receptacle S. H. Groove	\$.63
" " " No. S. H. Groove	.56
Fixture Rosette with Nipple	.56
Plug Receptacle 6 Amp.	.70
" " " 20 "	.91
Cord Rosette	.49
Blank Cast Cover	.42

SERIES V VAPORPROOF TYPE

Crouse Hinds or Similar

	Prices are for Iron Fittings and include Guard and Globe	Form 75
V-VA Complete as Above	\$ 5.85	\$ 5.92
VB-VC-VL Complete as Above	5.98	6.11
VCA-VLA-VT-VE-VS Complete as Above	6.17	6.30
VTA-VX Complete as Above	6.30	6.56
VXA Complete as Above	6.57	6.83
VF-VK-VP Complete as Above	6.57	6.50
VD-VJ Complete as Above	6.70	6.83
Prices are for Iron Fittings and include Guard and Globe		Form 200
V-VA Complete as Above	\$ 7.02	\$ 7.09
VB-VC-VL Complete as Above	7.15	7.28
VCA-VLA-VT-VE-VS Complete as Above	7.28	7.50
VTA-VX Complete as Above	7.41	7.67
VXA Complete as Above	7.67	7.93
VF-VK-VP Complete as Above	7.48	7.60
VD-VJ Complete as Above	7.67	7.80
		7.93

PARTS & ACCESSORIES FOR V SERIES

	Form	Form
Guard with Half Metal Shade	$\frac{3}{4}"$	$\frac{3}{4}"$
" " " Gauge Metal Shade	6.50	7.80
" " " without Shade	2.34	2.95
Globes only, clear	1.12	1.12
" " " opal	1.54	2.38
" " " green-blue & orange	2.38	3.30
" " " ruby	3.30	4.06
Brass Reflector Holder Galv. Finish	1.96	3.31
Threaded Blank Covers Iron Black Finish	1.05	1.40
Sealing Plate Iron Galv. Finish	.21	.35
Receptacle with Gasket & Screws	.56	.56

VAPORPROOF FIXTURES

For Type GS Fittings

(Page 89 Crouse Hinds Catalog No. 2000)

	Form 75	Form 200		
Iron	Brass	Iron		
Pendant or Bracket Type Complete...	\$ 7.93	\$ 11.18	\$ 8.80	\$ 12.42
Receptacle Only				.56

NOTE: Above numbers and figures are for Crouse Hinds' make or similar

FITTINGS, THREADLESS

STANDARD TYPES "Kondu" "Appleton" or Similar

Type Without Covers	$\frac{1}{2}"$	$\frac{3}{4}"$	$1"$	$1\frac{1}{4}"$
A	\$.46	\$.62	\$.84	\$ 1.26
B	.53	.70	.95	1.47
BE	.95	1.23	1.79	2.74
C	.74	.94	1.33	2.03
CB	1.04	1.34	1.86	2.80
D	.74	.94	1.29	2.03
E	.53	.67	.94	1.48
LB-LF-LL-LR	.81	.98	1.40	2.17
SE	.81	1.00	1.71	2.65
T-TL-TR	1.04	1.34	1.85	2.80
TB	1.47	1.82	2.38	3.64
U & UB	.91	1.12	1.54	2.52
X	1.33	1.82	2.45	3.43
XB	2.03	2.52	3.29	....

STANDARD TYPES—Continued

Types Without Covers	$1\frac{1}{2}"$	$2"$	$2\frac{1}{2}"$	$3"$
A	\$ 1.61	\$ 3.15	\$ 6.65	\$ 8.10
B	1.96	3.85	6.65	8.10
BE	3.64	6.30	11.70	13.30
C	2.66	5.11	8.55	11.15
CB	3.85	6.16	9.90	14.30
D	2.66	5.11	8.55	11.15
E	1.96	3.85	6.65	8.00
LB-LF-LL-LR	2.94	5.18	8.80	11.50
SE	3.09	7.00	11.86	14.85
T-TL-TR	3.85	6.16	9.90	14.40
TB	5.18	9.00	....	....
U & UB	3.29	6.00	10.10	13.20
X	4.48	8.33	12.35	19.15
XB	....	....	....	....

SPECIAL FITTINGS

	$\frac{1}{2}"$	$\frac{3}{4}"$	$1"$	$1\frac{1}{4}"$
H Couplings	\$.32	\$.48	\$.83	\$ 1.11
KO Box Connector	.20	.29	.67	1.36
NO " "	.24	.31	.56	.84
SCA Cable Connector	.13	.17	.24	....
SLP Short Elbow	.39	.52	.83	1.00
KOL Box Connector	.43	.57	.98	1.54
KOR Reducer	.58	.63	....	....
....	1\frac{1}{4}"	2"	2\frac{1}{4}"	3"
H Couplings	\$ 1.54	\$ 3.21	\$ 4.00	\$ 6.37
KO Box Connector	....	1.18	2.49	3.28
NO " "	....	....	....	4.30
SCA Cable Connector	....	....	....	....
SLP Short Elbow	....	1.23	2.66	....
KOL Box Connector	....	2.07	4.20	....
KOR Reducer	....	....	....	....

COVERS FOR ABOVE FITTINGS

	$\frac{1}{2}"$	$\frac{3}{4}"$	$1"$	$1\frac{1}{4}"$
Blank Metal	\$.11	\$.15	\$.32	\$.45
Rubber Gasket	.14	.14	.21	.28
Metal, $\frac{1}{2}$ " Nip.	.28	.35	.49	.64
" " "	.32	.39	.53	.69
" " "	.35	.42	.56	.71
" " "	.42	.49	.68	.78
Porcelain with Holes	.14	.21	.35	.50
Metal, Cord Grip	.28	.35	.49	....
....	1\frac{1}{4}"	2"	2\frac{1}{4}"	3"
Blank Metal	\$.63	\$.78	\$ 1.05	\$ 1.05
Rubber Gasket	....	.66	.84	.84
Metal, $\frac{1}{2}$ " Nip.	.81	....	....	....
" " "	.85	....	....	....
" " "	.88	....	....	....
" " "	.95	....	....	....
Porcelain with Holes	.67	.84	1.12	1.12
Metal, Cord Grip	....	....	....	....

DEVICES FOR ABOVE FITTINGS

	$\frac{1}{2}"$	$\frac{3}{4}"$	$1"$	$1\frac{1}{4}"$
Lamp Recept. without Shade Holder Groove PR...	\$.35	\$.42	\$.49	\$.49
" " " with Shade Holder Groove PRS...	.42	.49	.56	.56
Porcelain for Weatherproof Socket WP2...	.28	....	....	....
Polarity Plug Receptacle 10 Amp. P...	.56	.63	.70	.70
" " " Duplex PD...	....	....	....	.78
....	Sgle. Pole	Dble. Pole	Pole	3
Snap Switch 5 Amp. 125 Volt Non Indicating...	\$.70	....	....	\$ 1.20
" " " 125 " Indicating...	.77	....	....	....
" " " 125 " Non-Indicating...	1.12	\$ 1.47	1.47	....
" " " Indicating...	1.26	1.68	1.68	....

TYPE FS FOR FLUSH DEVICES

Type	Any Make
	1 Gang
FS-E-FSB	

Fittings, Threadless

TYPE "O" FOR SNAP SWITCHES, ETC.—Continued

Type	2 Amp.	1/2"	1/4"	1"
OA	\$1.05	\$1.19	\$1.61	
OC	1.19	1.40	1.90	
OCB	1.61	1.96	2.52	
OE	.98	1.12	1.47	
OEB	1.33	1.54	2.10	
OL	1.33	1.54	2.10	
OLB	1.61	1.96	2.59	
OT	1.61	1.96	2.59	
OTB	1.96	2.38	3.22	
OU	1.12	1.47	1.90	
OUE	1.61	1.96	2.52	
OX	1.96	2.38	3.22	
OXB	2.31	2.87	3.78	

COVERS FOR TYPE "O" FITTINGS

	5	10	20
	Amp.	Amp.	Amp.
Blank Metal Cover, Round.....	\$2.21	\$2.28	\$3.35
Porcelain Cover, Round with holes.....	.21	.35	.49
Metal Cover with 1/4 or 1/2 Cord Grip.....	.35	.42	.49
Blank Metal Cover with 1/4 male or female nipple.....	.35	.42	.49
" " " 1/4 " " " " .....	.42	.49	.56
" " " 1/2 " " " " .....	.49	.56	.63
" " " 5/8 " " " " .....	.56	.63	.70
Rubber Gaskets.....	.14	.14	.21
Lamp Receptacles Porcelain Edison Base.....	.42	.49	...
" " Composition T Slot.....	.84	...	...

REDUCING BUSHINGS

Large End	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	
Small End	1/2"	\$4.41	\$5.53	\$7.71	\$8.80	\$1.05	\$1.40	\$1.55
" "	3/4"	.60	.76	.90	1.19	1.50	1.67	
" "	1"	.81	.94	1.29	1.60	1.86		
" "	1 1/4"	..	1.13	1.43	1.90	2.42		
" "	1 1/2"	..	..	1.51	1.90	2.42		
" "	2"	..	..	..	2.27	2.97		
" "	2 1/2"	..	..	..	..	..	3.26	

FITTINGS, SPRAGULETS, WIRELETS OR T & B

BRANCH TYPE Series 48

Description	G.E., Steel City or T & B Numbers	Price Each
Branch Body for 3/4" & 1/2" Rectangular Shape.....	SP-48241	\$2.27
Cover Metal Flat Closed.....	SP-48C1	.11
" " with 1/2" Knockout.....	SP-48C6	.11
" " Pendant Type with 1/4 Bushing.....	SP-48C8	.12
" " Pendant Type with 1/2 Bushing.....	SP-48C11	.16
" " with 1/4 Male or Female Nipple.....	SP-48C22 & 23	.30
" " with 1/2 Male or Female Nipple.....	SP-48C24 & 25	.41
Cover Porcelain with one or two wire Holes.....	SP-48C75 & 76	.14
" " three or four wire Holes.....	SP-48C77 & 78	.15
" " 1/4 Male or Female Nipple.....	SP-48C82 & 83	.20
" " 1/2 Male or Female Nipple.....	SP-48C84 & 85	.41

SHALLOW TYPE Series 14

Description	G.E., Steel City or T & B Numbers	Price Each
Body Octagonal Shape for 1/2" or 1/4".....	SP-14241	\$3.35
Cover Metal Flat Closed.....	SP-14C1	.11
" Raised with 1/2" Knockout.....	SP-14C7	.11
Cover Metal Flat Pendant with 1/4 Bushing.....	SP-14C8	.12
" " with 1/4 or 1/2 Male or Female Nip.....	SP-14C11	.16
" " For all surface Mounted Devices.....	SP-14C22-23-24-25	.29
" " Raised for Sign Receptacles.....	SP-14C31-32-34-35-36	.14
" " Flat for all Fluted Devices.....	SP-14C39	.35
" Porcelain with one or two holes.....	SP-14C75 & 76	.15
" " Three or Four holes.....	SP-14C77 & 78	.15
Cover Porcelain with 1/4 Male or Female Nipple.....	SP-14C82 & 83	.29
" " 1/2 Male or Female Nipple.....	SP-14C84 & 85	.41
Raised Angle Adaptor for Device Covers.....	SP-14C47	.26
" with Uno Shade Holder.....	SP-14C67	.60

DEEP TYPE Series 34

Description	G. E., Steel City or T & B Numbers	Price Each
Body Deep Octagonal Shape 1/2" & 1/4".....	SP-34461	\$4.47
Cover Metal Blank Flat.....	SP-34R1	.14
Cover Metal For Flush Switches.....	SP-34R2 & 3	.14
" " Rotary Switches.....	SP-34R4	.14
" " Receptacles without Door.....	SP-34R5	.14
" " Receptacles with Door.....	SP-34R6	.41
" " Standard Dble. Plug Receptacle.....	SP-34R7	.14
" " Hubbell Dble. Plug Receptacle.....	SP-34R8	.24
" Chapman Recept. with Doors.....	SP-34R9	.60
" For GE 30 Amp. Polarized Plug Recp.....	SP-34R13	.17
" GE Tumbler Switches.....	SP-34R14	.14
" Hubbell and H&H Tumbler Switches.....	SP-34R15 & 16	.19

COUPLINGS

	Price
SP-1410 Complete Coupling for 1/2" Conduit.....	\$1.16
SP-1420 " " " " .....	.24

FITTINGS, ENTRANCE

"ADAPTI"

	1/2"	1/4"	1"	1 1/4"
Ent. Ells with Cov. Ser. 1100.....	\$4.45	\$3.50	\$3.60	\$1.05
" Fitt. with Cov. Ser. 2700.....	.45	.55	.65	1.15
Angle Ent. Fitt. with Cover Ser. 2700.....	.50	.55	.65	1.20
Signal Ent. Caps No. 2810-2811.....	.75	.75	..	..
Ent. Ells with Cov. Ser. 1100.....	\$1.50	\$3.00	..	..
" Fitt. with Cov. Ser. 2700.....	1.90	3.00	\$8.25	\$7.65
Angle Ent. Fitt. with Cov. Ser. 2700.....	2.00	3.10	\$6.30	7.50
Signal Ent. Caps No. 2810-2811.....	..	..	..	..

"UNILETS"

	1/2"	1/4"	1"	1 1/4"
FEB Elbow with Cov. 1700 & 1900.....	\$5.50	\$6.00	\$7.70	\$1.70
FB Elbow with Cov. 1713 to 16.....	.35	.50	.60	..
FC End Fitt. with Cov. 1723-33-43.....	.20	.25	.30	..
AY Angle Fitt. 1950 to 54.....	.55	.60	.70	1.95
LAY End Fitt. with Cov. 1790 to 94.....	.56	.60	.75	1.35
FEB Elbow with Cov. 1700 & 1900.....	\$1.00	\$3.25	\$7.80	\$9.00
FB Elbow with Cov. 1713 to 16.....	..	..	..	..
FC End Fitt. with Cov. 1723-33-43.....	..	..	..	..
AY Angle Fitt. 1950 to 54.....	2.35	..	..	..
LAY End Fitt. with Cov. 1790 to 94.....	1.75	..	..	..

"BEND HICKS"

	1/2"	1/4"	1"	1 1/4"
Bend Hicks Galvanized.....	\$5.50	\$6.00	\$8.65	\$1.75
Bend Hicks Galvanized.....	\$2.15	\$4.10	\$6.00	\$8.25

"CONDULETS"

Form 6

	1/2"	1/4"	1"	1 1/4"
F Type Ent. Fitt. with Porc. Cov.....	\$4.40	\$4.45	\$6.00	\$9.95
LB Type Ent. Fitt. with Metal Cov.....	.45	.50	.60	1.15
" " " "
F Type Ent. Fitt. with Porc. Cov.....	\$1.60	\$2.85	..	..
LB Type Ent. Fitt. with Metal Cov.....	1.40	2.45	..	..

"ELECTROLETS"

	1/2"	1/4"	1"	1 1/4"
FB Angle Fitt. with Cov. 713-83.....	\$4.45	\$5.55	\$7.70	\$1.10
KA End Fitt. with Cov. 1013 to 43.....	.20	.20	.25	.30
KB Elbow Fitt. with Cov. 1113 to 33.....	.35	.50	.60	..
SLB Elbow Fitt. with Cov. 1 to 4.....	.50	.60	.75	1.35
Y Capped Elbow Y1 to 5.....	.50	.60	.65	1.75
FB Angle Fitt. with Cov. 713-83.....	\$1.80	\$3.00	\$7.00	\$8.50
KA End Fitt. with Cov. 1013 to 43.....	..	..	..	..
KB Elbow Fitt. with Cov. 1113 to 33.....	..	..	..	..
SLB Elbow Fitt. with Cov. 1 to 4.....	..	..	..	..
Y Capped Elbow Y1 to 5.....	2.15	..	..	..

G. E. See T & B below

GEE-VEE

	1/2"	1/4"	1"	1 1/4"
F Service Cap Series 6000.....	\$4.45	\$5.50	\$7.70	\$1.00
B " " " " .....	.45	.50	.70	1.00
F Pipe " " " " .....	.40	.50	.70	.85
FB Universal " " " "	1.00	1.25	1.65	2.75
Weathercap " " " " .....	.55	.55	..	..
Service Elbow " " " " .....	.40	.55	.65	1.60
A Terminal " " " " .....	.40	.45	.70	1.05
Endo Terminal Series 90000.....	.15	.20	.25	..
" " " "
F Service Cap Series 6000.....	\$1.90	\$3.35	\$7.80	\$9.25
B " " " "	1.90	3.35	7.60	9.25
F Pipe " " " "	1.20	1.75	3.00	4.15
FB Universal " " " "	3.75	5.40	9.60	12.70
Weathercap " " " " .....	..	..	..	..
Service Elbow " " " "	2.75	3.65	..	..
A Terminal " " " "	1.40	2.40	4.55	7.40
Endo Terminal " " " " .....	..	..	..	..

"GEM POWERLETS"

	1/2"	1/4"	1"	1 1

T & B

	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "
Ent. Cap 1525-32 with Cover.....	\$.40	\$.45	\$.65	\$1.00
Capped Elbow 1470-84 with Cover.....	.50	.60	.70	1.95
Insulets 1610-11-12 with Cover.....	.15	.20	.25	....
Angle Insulets 1640-1-2 with Cover.....	.30	.45	.60	....
Cable Insulets 2000 with Cover.....	.15	....	....	....
Ent. Cap 1525-32 with Cover.....	\$1.70	\$2.95	\$6.25	\$7.65
Capped Elbow 1470-84 with Cover.....	2.30	....	....	....
Insulets 1610-11-12 with Cover.....	....	....	....	....
Angle Insulets 1640-1-2 with Cover.....	....	....	....	....
Cable Insulets 2000 with Cover.....	....	....	....	....

FITTINGS, "ADAPTI"

ROUND "ADAPTI" BOXES

Series Numbers	Style	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"
No. 2900 to 2903	1 Back Outlet	\$.40	\$.48	\$.60
No. 3000 to 3005	1 Side Outlet	.43	.50	.74
No. 3100 to 3105	" "	.40	.48	.60
No. 3100T & 3101T Thrdls.	" "	.48	.55	....
No. 3170 to 3175	" "	.47	.54	.67
No. 3200 to 3205	2 "	.48	.54	.74
No. 3200T & 3201T Thrdls.	" "	.60	.68	....
No. 3270 to 3275	" "	.60	.67	.94
No. 32170 to 32175	" "	.54	.60	1.00
No. 3300 to 3305	3 "	.64	.88	.98
No. 3300T to 3305T Thrdls.	" "	.82	.95	....
No. 33170 to 33175	" "	.71	.83	1.07
No. 3400 to 3405	4 "	.80	1.05	1.20
No. 3500 to 3705	2 "	.54	.60	.75
No. 3800 to 3805	" "	.54	.60	.80
No. 3900 to 4105	3 "	.80	.93	1.08
No. 4800 to 5005	4 "	.94	1.03	1.34

Series Numbers	Style	$\frac{1}{2}$ "	$\frac{3}{4}$ "	2"
No. 2900 to 2903	1 Back Outlet	\$1.10	....	....
No. 3000 to 3005	1 Side Outlet	1.30	\$2.00	\$2.70
No. 3100 to 3105	" "	1.10	1.80	2.40
No. 3100T & 3101T Thrdls.	" "	....	....	....
No. 3170 to 3175	" "	1.15	1.85	2.46
No. 3200 & 3205	2 "	1.25	2.13	2.70
No. 3200T & 3201T Thrdls.	" "	....	....	....
No. 3270 to 3275	" "	1.40	2.28	2.88
No. 32170 to 32175	" "	1.34	2.20	2.80
No. 3300 to 3305	3 "	1.96	2.68	3.00
No. 3300T to 3305T Thrdls.	" "	....	....	....
No. 33170 to 33175	" "	1.70	2.75	3.10
No. 3400 to 3405	4 "	1.87	2.90	3.35
No. 3500 to 3705	2 "	1.40	2.28	3.35
No. 3800 to 3805	" "	1.40	2.28	3.35
No. 3900 to 4105	3 "	1.85	2.90	4.00
No. 4800 to 5005	4 "	1.95	3.55	4.70

PARTS For Above Boxes

Series No.	Description	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"
500-501-503	Base Only	\$.27	\$.27	\$.54
500X-501X	Extension Ring	.27	.27	.40
501A	Base Concealed to Exptd.	.67	.67	.67
0500	" with Tapped Boss	.34	.34	....
510 to 512	Base	.40	.40	.80
520 to 522	"	.27	.27	.52
530	"	1.80	1.80	....
540 to 542	"	.27	.27	.52
30 to 35	Metal Side Plates	.14	.14	.20
40 to 42	Insulated Side Plates	.16	.16	.34
50 to 54	Armd. Flex. Side Plates	.34	.43	.52
60 to 65	Angle Outlet	.16	.24	.43
70 to 75	Elbow Outlet	.24	.30	.50
90 to 93	Connecting Outlet	.28	....	.34
100 & 101	Straight for No. 500 Base	.16	.24	....
110 to 113	" " No. 501 "	.28	.34	.43
120 to 125	" " No. 502 "	.47	.53	.67
130 to 135	" " No. 503 "	1.08	1.33	1.60
140 to 145	" " No. 504 "	2.67	3.08	3.48
300 & 301	Threadless Outlet	.20	.28	....
310 & 311	" "	.34	.40	....

Series No.	Description	$\frac{1}{2}$ "	$\frac{3}{4}$ "	2"
500-501-503	Base Only	\$.54	\$1.08	\$1.08
500X-501X	Extension Ring	.40	....	....
501A	Base Concealed to Exptd.	.67	....	....
0500	" with Tapped Boss	....	....	....
510 to 512	Base	.80	1.60	1.60
520 to 522	"	.52	1.08	1.08
530	"	....	....	....
540 to 542	"	.52	1.08	1.08
30 to 35	Metal Side Plates	.20	.38	.38
40 to 42	Insulated Side Plates	.34	.67	.67
50 to 54	Armd. Flex. Side Plates	.67	....	....
60 to 65	Angle Outlet	.48	.94	1.08
70 to 75	Elbow Outlet	.55	1.00	1.14
90 to 93	Connecting Outlet	....	.40	.47
100 & 101	Straight for No. 500 Base	....	....	....
110 to 113	" " No. 501 "	.48	....	....
120 to 125	" " No. 502 "	.80	.94	1.07
130 to 135	" " No. 503 "	1.88	2.14	2.40
140 to 145	" " No. 504 "	3.87	4.28	4.67
300 & 301	Threadless Outlet	....	....	....
310 & 311	" "	....	....	....

COVERS For Round Adapti Boxes

Numbers	Description	Price
1	Porcelain One Hole Cover.....	\$.18
2	Metal For Devices.....	.30
3	Porcelain One Hole Cover.....	.30
4	Porcelain.....	.22
5 & 6	Porcelain with $\frac{1}{2}$ " Male or Female Nipple.....	.38
7 & 8	" " " " "	.53
9 & 10	Malleable with $\frac{1}{2}$ " Male or Female Nipple.....	.30
11 & 12	" " " " "	.38

NOTE: For "Adapti" Entrance Fittings See Page PL-13.

"GROUNDELET" FITTINGS
Crouse Hinds—Appleton & Similar
Type GCA

Without Soldering Lug	Price
Fitting No. GCA-12 For $\frac{1}{2}$ " Conduit.....	\$.77
" -172 " with lug.....	.81

Type GCD

With Angle Adjustment	Price
GCD-12 For $\frac{1}{2}$ " Conduit without Lug with one Strap.....	\$.90
GCD-172 For $\frac{1}{2}$ " Conduit with Lug with one Strap.....	.95
GCD-22 For $\frac{1}{2}$ " Conduit with Lug with two Straps.....	1.77
GCD-32 For 1" Conduit with Lug with three Straps.....	2.61

Type GCE & GCEE

With Strap Clamp Terminal

Size of Conduit	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"
Outside Diameter	$\frac{1}{2}$ " to $\frac{3}{4}$ "	$\frac{3}{4}$ " to $\frac{5}{8}$ "	$\frac{5}{8}$ " to $\frac{1}{2}$ "
of Water Pipe	$2\frac{1}{4}$ "	$4\frac{1}{4}$ "	$6\frac{1}{4}$ "
Number	12	14	22
Price	\$1.58	\$1.80	\$2.16
	\$2.97	\$3.42	\$4.14
	\$4.41	\$5.00	\$6.17

Type GCE

With Threaded Plug Terminal

GCE-142 For $\frac{1}{2}$ " Conduit without Lug.....	\$.90
GCE-242 " " " with Lug.....	1.04
GCE-342 " " " with Lug.....	1.17

Type GC

For Open Ground Wire

GC-92 Cast Brass with No. 4 Lug.....	\$.72
GC-922 " " " " 00 Lug.....	1.44

GC BRASS BUSHINGS For Ground Fittings

Size	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$2\frac{1}{2}$ "	3"
Without Cap Screw.....	\$.10	\$.13	\$.20	\$.24	\$.31
With Cap Screw.....	.20	.24	.31	.32	.40
				.61	1.00
					1.25

TERMINALS, LUGS, JUMPERS, CLIPS, ETC.

Description	K. O.	Price
Standard Squeeze Connector $\frac{1}{2}$ - $\frac{1}{4}$ ".....	$\frac{1}{2}$ "	\$.06
" Set Screw Connector $\frac{1}{2}$ - $\frac{1}{4}$ ".....	$\frac{1}{2}$ "	.06
" Slip In Connector $\frac{1}{2}$ - $\frac{1}{4}$ ".....	$\frac{1}{2}$ "	.06
" Duplex Connector $\frac{1}{2}$ - $\frac{1}{4}$ ".....	$\frac{1}{2}$ "	.18

STRAIGHT	Squeeze	18
BOX	or	
CONNECTORS	Tangent	.50
	Type	.65
		.85
		1.25

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Fittings, Armored Cable

FITTINGS OR BOX CONNECTORS, ARMORED CABLE—
Continued

COUPLINGS FOR	For $\frac{3}{4}$ " Conduit	.32
RIGID	" $\frac{3}{4}$ " "	.44
TO	" $\frac{1}{2}$ " "	.52
FLEXIBLE	" $\frac{1}{2}$ " "	.72
CONDUIT	" $\frac{1}{2}$ " "	.90
Bushings or Ferrules—Brass.		1.37
		.02

Bushing or Ferrules—Brass.

FITTINGS FOR "OVALFLEX" ARMORED CABLE

Number	Description	Price
2150-57-60-01	Straps—Fasteners & Bushings.	\$.02
2159	Toggle with Wire Loop.	.03
2176-2180-2184	Set Screw Connector.	.10
2179-2181	Special Box Connector.	.35
2155-2156	90 Degree Box Connector.	.35
412-413	Connector for Ovalflex to Metal Molding.	.35
9050-8	Squeeze Connector.	.10

HANGERS

FOR CABLE & CONDUIT
Mineralac

Hangers	Mfgs. No.	Conduit Size	Lead Covered Cable Size	Jap Fin.	Glv. Fin.	Mfgs. No.	Porcelain Bushings	For RC Cable	Price
0	$\frac{3}{4}$ "	No. 14	\$.07	\$.10	1	8-2-0		\$.10	
1	$\frac{1}{2}$ " to $\frac{3}{4}$ "	No. 1 to 4, 0	.08	.11	2	3-0-4-0		.12	
2	1"	4/0 to 300 M	.10	.12	3	250M-450M		.13	
3	$\frac{3}{4}$ "	500 to 750 M	.10	.12	4	500M-700M		.15	
4	$\frac{1}{2}$ "	800 to 1125M	.14	.15	5	750M-1000M		.17	
5	2"	1500 M	.14	.16	6	1125-2500M		.24	
6	$\frac{3}{4}$ "	2000 M	.16	.18					

ADJUSTABLE BEAM HANGERS
T & B or Similar

Type A Clamp Including Bolts Fits Flange $2\frac{3}{4}$ " to $7\frac{3}{4}$ ".			Price Each
Type B & C Clamp Including Bolts Fits Flange 7" to 12".			.50
Special Bolts.			.10

Supports for above Hangers						
For One Conduit Steel	$\frac{3}{4}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	2"
	\$.18	\$.16	\$.25	\$.33	\$.40	\$.51
" Two Conduit Mall.			.20	.25	.33	.50
" Four Conduit Mall.			.31	.36		

NOTE: For Price of Complete Hanger add Prices of Clamp & Supports.

HANGERS & PERFORATED BAR
Grabler

Perforated or Extension Bar		
For $\frac{3}{4}$ to $1\frac{1}{2}$ " Conduit Per Foot.		\$.05
" 2" to $3\frac{1}{2}$ " "		.06
" $3\frac{1}{2}$ " to 6"	" "	.08

Hangers		
1	Hinge Hanger with Extn. Bar & Lag Screw	$\frac{1}{4}$ " $\frac{3}{4}$ " 1" $1\frac{1}{4}$ " $1\frac{1}{2}$ " 2" $2\frac{1}{2}$ " 3"
7	Band Hanger Extn. Bar and Beam Clamp	.17 .17 .18 .20 .21 .24
13	Hinge Hanger, Socket and Beam Clamp	.32 .32 .35 .36
200	Band Hanger Only	.09 .09 .10 .11

Lag Screws—Beam Clamps & Beam Plates		
19	Flattened Lag Screw with Bolt $\frac{1}{2}$ " to $1\frac{1}{2}$ "	Each
20	Threaded Lag Screw, no Bolt $\frac{1}{2}$ " to $1\frac{1}{2}$ "	Each
21	Beam Plate with Bolt $\frac{1}{2}$ " to $1\frac{1}{2}$ "	Each
22	Beam Clamp-Forged—with Bolt $\frac{1}{2}$ " to $1\frac{1}{2}$ "	Each

KNOBS, TUBES & CLEATS, PORCELAIN

KNOBS		
Type	With Screw	With Nail
514 Split Knobs	\$.02 $\frac{1}{4}$	\$.02
515 Solid Knobs	.03	\$.02 $\frac{1}{4}$
516 Nailit		
517 Screwit	.03 $\frac{1}{4}$	
4 & 4 $\frac{1}{2}$ Knobs Solid	.04	.03 $\frac{1}{4}$
No. 9419 Split $1\frac{1}{4}$ " x $1\frac{1}{2}$ "		.07
9420 Split $2\frac{1}{2}$ "		.12
22 Victor Split		.10
6061 Solid Teleph. 2 Groove		.07
6062	4	.10

TUBES		
Diam.	3" & under	4" 5" 6" 8" 10" 12" 14" 16"
Price Each	\$.01 $\frac{1}{2}$	\$.02 \$.02 $\frac{1}{2}$.03 \$.03 \$.10 \$.17 \$.25 \$.32 \$.40
	.02	.02 $\frac{1}{2}$
	.04	.05
	.07	.06
	.07	.08
	.12	.13

CLEATS
2 & 3 Wire

Standard No. 334 2 & 3 Wire Unglazed Cleats without Screws Per Pair \$.04

Glazed " " ".06

ONE WIRE CLEATS
B & D Type—2 Piece

Old No.	Dimensions	For Size Wire	Price Each
1A	$\frac{3}{4}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	14 to 6	\$.06
1 $\frac{1}{2}$ A	$\frac{3}{4}$ " 2 $\frac{1}{2}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	6 " 2	.07
2A	$\frac{3}{4}$ " 2 $\frac{1}{2}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	2 " 0	.11
2 $\frac{1}{2}$ A	$\frac{3}{4}$ " 2 $\frac{1}{2}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	0 " 000	.15
3A	$\frac{3}{4}$ " 3 $\frac{1}{2}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	000 " 200,000 CM	.17
3B	$\frac{3}{4}$ " 3 $\frac{1}{2}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	000 " 200,000 CM	.18
3 $\frac{1}{2}$ R	$\frac{3}{4}$ " 3 $\frac{1}{2}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	2 " 500,000 CM	.20
4B	$\frac{3}{4}$ " 3 $\frac{1}{2}$ " 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	5 " 1,000,000 CM	.25
4 $\frac{1}{2}$ B	$\frac{3}{4}$ " 5" 1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ "	8 " 1,250,000 CM	.35

LOOM & L-SUNDRIES

LOOM, NON-METALLIC CONDUIT

Size	Price per Foot	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
		\$.03	\$.03	\$.09	\$.12	\$.15	\$.17

SOLDERING LUGS—One Hole

For Wire Size	Amps.	Size Wire Hole	Price Each
No. 10 Under.	25	1/8"	\$.04
8	35	1/8"	.04
6	50	1/8"	.05
4	70	1/8"	.06
2	90	1/8"	.08
0	125	1/8"	.09
00	150	1/8"	.12
000	175	1/8"	.18
0000	225	1/8"	.21
250 M. C. M.	237	1/8"	.36
400 M. C. M.	325	1/8"	.51
450 M. C. M.	362	1/8"	.70
500 M. C. M.	400	1/8"	.73
600 M. C. M.	450	1/8"	.76
900 M. C. M.	550	1/8"	.96
1000 M. C. M.	650	1/8"	1.17

For 2-Hole Lugs

With Regular Stud Holes Add 50% To Above Prices.

CONDUIT LOCKNUTS

Also on Page PL-8

Size	Price
1/8"	\$.01
3/16"	.015
1/4"	.015
5/16"	.015
3/8"	.015
1/2"	.015

LINKS

For Chain

Also on Page PL-8

Non-Insulating Splicing Links—Any Make—Each	Price
	.05

Insulating Acorns—See Page PL-4 and Page PL-18.

MAIL BOXES

COUCH

No. 73 Tilting Mail Boxes Post Office approved per Receptacle. \$4.15

"TILTING" Speaking Tube Type

Series 7303 to 7309 and 73010 to 73012

No. of Boxes	3	4	5	6	7	8	9	10	11	12
Price ea.	16.20	21.60	27.00	32.30	37.80	43.20	49.60	54.00	59.40	64.80

SINGLE GANG Non-Tilting

No. 78 or 780 with call button or speaking tube unit. Price each \$3.15

MAILING, NATIONAL

MOLDING

Nos. 022 & 222 Molding For Two Wires—Per Foot. \$.10

* 033 & 044 Two to Four Wires—Per Foot. \$.11

here's a
positive
method
of
grounding

NON-METALLIC
SHEATHED
CABLE

NON-METALLIC

found only in non-metallic sheathed cable

NON-METALLIC Sheathed Cable may now be obtained either with or without grounding wire, according to 1929 revisions of the National Code.

The need for just such a dependable non-corrosive ground return has long been felt by every thoughtful contractor.

Good practice generally

calls for grounding as a prime protection for life and property. But it remained for the manufacturers of Non-Metallic Sheathed Cable to provide the first continuous non-corrosive ground return—and to protect interruption of its continuity from mechanical injury by placing the conductor inside the cable.

If you have not seen this new Non-Metallic Sheathed Cable, write to any of the Licensed Manufacturers listed below, for sample.

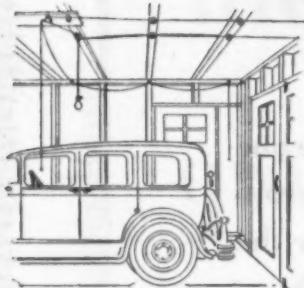
American Circular Loom Company
Anaconda Wire and Cable Company
Collyer Insulated Wire Company
Eastern Tube and Tool Company
General Electric Company
Marion Insulated Wire and Rubber Company
National Metal Molding Division
National Electric Products Corporation
Rome Wire Company
Division of General Cable Corporation
The Wiremold Company
Triangle Conduit Company, Inc.

The above Manufacturers are Licensed under Non-metallic Sheathed Cable Patents number 1439323; 1520680; 1208788; 1673752.



SHEATHED CABLE

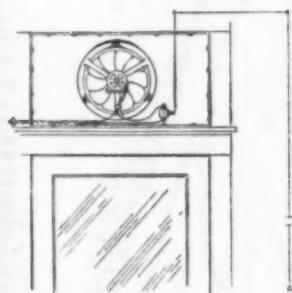
now put the *Levolier SWITCH* anywhere with the new bracket!



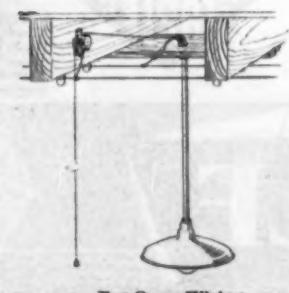
Providing Cord at Car Window
and at Garage Door



For Store Windows and
Temporary Display Booths



For Ventilating Fan Over Sink
Where Difficult to Reach



For Open Wiring

THE famous Levrier Switch that takes the continuous wear and tear of switching on and off 500 watt gas filled lamps, can now be used for many new applications through the use of the new Levrier Bracket.

With the new bracket you can put the Levrier Switch where you want it—and quickly, too. The pictures at the right show graphically just how the Levrier Switch Bracket works. It fits like a part of the switch, it holds the switch firmly wherever installed and it is small and inconspicuous. Speedy, reliable installations are assured.

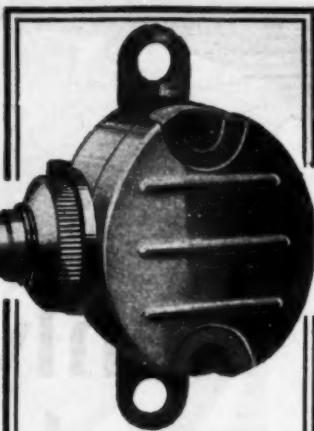
The sketches at the left offer a few suggestions as to how the new bracket may be used. You will think of many more applications—ways in which this little bracket and the Levrier Switch will save you time and money.

Send for Sample

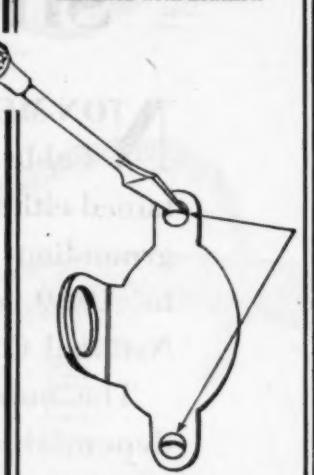
See for yourself just how the new Levrier Switch Bracket works. Samples of the Levrier Switch and the new Levrier Switch Bracket will be mailed free for the asking.



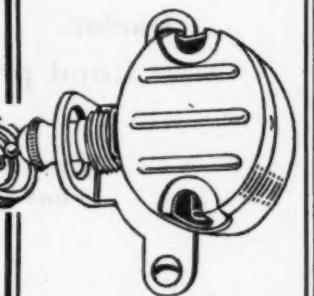
MCGILL
MANUFACTURING CO.
Electrical Specialties of Quality
ESTABLISHED 1904
VALPARAISO - INDIANA



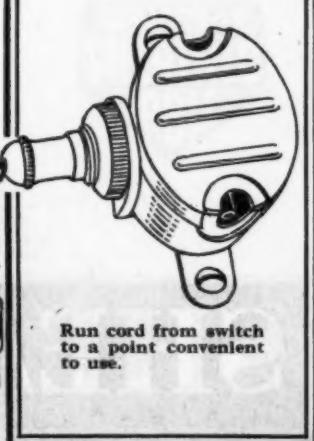
Showing Levrier Switch
installed with Bracket.



Fasten with two screws
to ceiling, wall or de-
vice being installed.



Place Levrier Fixture
Switch thru opening
and screw on nut.



Run cord from switch
to a point convenient
to use.

Reading This May Bring An Unusual Opportunity To You

Selling electric ventilation is a sound, profitable business. The market is large, sales are not difficult to make, profits are net profits. If you are already selling electrical equipment of any kind or sheet metal products, electric ventilation will not add to your overhead. And American Blower will furnish you with a complete sales and advertising plan and free advertising material.

Thousands of contractors are making a good share of their profits each year selling American Blower Electric Ventilating equipment. Many of these contractors entered the ventilating business through reading an advertisement similar to this one in this publication.

You can do the same thing—if you'll answer this advertisement and if you'll let us lay all the facts about the ventilating business right before you. There is no obligation. Write today.

NEW
MERCHANDISING IDEAS

MORE SALES
FOR YOU

NEW
SALES HELPS

A NEW
ADVERTISING PROGRAM

GREATER
PROFIT FOR YOU

**A Bigger and Better
Built-in-blower
SALES PLAN**

Ventilating Contractors
and Electrical Dealers

American Blower

Sell American Blower Electric Ventilating Equipment for stores, offices, factories, garages, shops and many other types of buildings.

AMERICAN BLOWER CORPORATION, DETROIT, MICH.
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONT.
BRANCH OFFICES IN ALL PRINCIPAL CITIES

(910)

American Blower
SIROCCO VENTILATING, HEATING, AIR CONDITIONING, DRYING, MECHANICAL DRAFT
MANUFACTURERS OF ALL TYPES OF AIR HANDLING EQUIPMENT SINCE 1881

COUPON	
AMERICAN BLOWER CORPORATION 6000 Russell Street, Detroit	
Please send me your Sales Plan book	
Name _____	Street _____
City _____	State _____

Plugs, Appliance

PLUGS, APPLIANCE

Make	Number & Description	Price Each
American Beauty	802-803 Plug Complete for Small Irons.....	\$.50
"	806 " Large Irons.....	1.35
"	807 " Toasters & Stoves.....	.25
Arrow	8510 with Switch.....	.90
Beaver	F1 Gripall Super Type Adjust. Contacts.....	.45
"	F4 " Nickel Alloy Contacts.....	.55
"	F5 " Armored Case.....	.55
"	F6 " Type Arm'd Case Nickel Alloy Cont.....	.60
"	F7 " High Grade Bakelite.....	.60
"	F22 Suitzall Double Contacts.....	.20
"	F31 " Single Contacts.....	.15
"	F32 " Double Contacts.....	.20
"	F32 " Armored Case.....	.30
"	F34 " Small Plug Bakelite.....	.30
"	G-1 Gripall Plug Adjust. Contacts.....	.90
"	G-21 Push Button Type.....	.45
Bryant	G-22 New Toggle Type.....	.45
"	668 Plug Complete with Switch.....	.85
"	752 " Shorter than 668.....	.65
Cutler-Hammer	7051 Plug Complete with Switch.....	.90
Dover	13 Up Connector Plug for 3½ & 6 lb. Irons.....	.50
"	13 Switch Plug Complete.....	1.00
Hemco	250 Heater Plug, no Switch.....	.45
Hemco	Switch Appliance Plug.....	.80
Hotpoint	CD6P1 Iron Plug.....	.45
"	CD69P1 " Armored.....	.60
"	CD79P1 " with Switch.....	1.00
Hubbell	7020 Appliance Switch Plug.....	.90
Kool-Pull (Colts)	Appliance Plug, no Switch.....	1.00
"	with Switch.....	1.25
Liberty	932 Heater Plug.....	.35
Plugall	9 Appliance Plug with Spring.....	.85
"	700 " " Switch.....	.85
Propp	5—One & All Appliance Plug, no Switch.....	.30
"	55 Standard Iron Plug, no Switch.....	.25
"	56 Armored.....	.55
"	52 Iron Plug with Switch.....	.55
P & S.	1550 Appliance Switch or Pendant.....	.90
Reynolite	500 Reynolite Connector Plug, no Switch.....	.50
"	510 " " with Switch.....	.85
Rodale	P-21 Appliance Plug No Switch.....	.25
"	P-29 " Armored.....	.30
"	610 " Bakelite No Switch.....	.30
"	615 " " Armored.....	.45
"	850 " With Switch.....	.65
"	800 " Armored With Switch.....	1.00
Security	151 Security Appliance Plug, no Switch.....	.40
Simplex	890 Armored Appliance Plug, no Switch.....	.75
Sunbeam	Heater Plug.....	1.50
Torrid	B-060-3-4-5-6 Safety Control Plug.....	1.00
"	B-080-3-4-5-6 Heat Control Plug.....	1.00
Westinghouse	299423 Plug Complete, no Switch.....	.75
"	373656 " with Switch.....	1.00
White Cross	White Cross Heater Plug, no Switch.....	.50
"	with Switch.....	.90

PANEL BOARDS OR FUSE CABINETS

BULLDOG FUSENTERS

No.	Description	2	4	6	8	12
CBS	Surface	Circ.	Circ.	Circ.	Circ.	Circ.
CBS	Black Finish with inside shield	\$1.85	\$2.35	\$3.95	\$7.10	\$10.40
BOS	Black Finish with out Shield	1.70	2.20	.....	.....	.....
BF	Flush Luminized Finish	2.50	3.75	5.40	8.80	11.80
BBF	Black Finish	2.00	2.75	4.75	.....	.....
BSF	Lum. Finish with Toggle Switches	.....	6.65	10.00	13.30	20.00
BSS	Lum. Finsh with one 30 A. Saftofuse	20.60	22.00	32.00	35.25	.....
BSS	Lum. Finish with one 60 A. Saftofuse	21.60	22.50	32.35	35.65	.....
BKF	Lum. Finish Com'bnd Fusenter & Pull Box	.....	6.65	10.00	15.00	20.00

Combinations—For Resale Prices on all other Fusenter Combinations deduct 17% from Bulldog Co.'s List Prices.

All Steel Equipment Co., FUSE CAB

Style & No.	Description	2	4	6	8	12
		Circ.	Circ.	Circ.	Circ.	Circ.
C-702-4-6	Surface Small Type	\$1.75	\$2.45	\$3.75	.....	.....
C-902-4-6	Flush Small Type	2.20	2.85	4.95	.....	.....
Series D	Surface Type Sgl. Fuse	.....	.....	.....	.....	.....
3004 to 3074	Not for Branch Switch	....	3.20	5.10	\$7.50	\$10.10
3034 to 3094	Not for Branch Switch	....	3.75	5.60	9.00	12.10
3002 to 4012	Surface Type Dbl. Fuse	3.20	5.10	10.10	23.00	36.00
4022 to 4032	Not for Branch Switch	3.75	9.00	12.10	27.00	45.00
Series DS	Flush or Surface-Sgle.	.....	6.90	9.25	13.80	21.00
3300 & 4300	Fuse Trims for Tog. Sw.	....	6.90	9.25	13.80	21.00
3500 & 4500	Flush or Surface-Dble.	.....	9.25	21.00	34.50	70.00

TRUMBULL—CIRCLE T Residence Panel Boards

		4	6	8	10	12
		Circ.	Circ.	Circ.	Circ.	Circ.
Surface or Flush Mounting	4 Circ. No 3104 to 3212 Flush Mtg.	.....	.....	.....	.....	.....
Or Fusing	2006 to 2912 Surface Mtg.	\$2.85	\$4.60	\$9.75	\$11.30	\$13.00
Double	No. 3404 to 3412 Flush Mtg.	.....	.....	.....	.....	.....
Or Fusing	2704 to 2712 Surface Mtg.	9.15	12.45	18.25	23.25	26.60

September, 1929

CUTLER-HAMMER (T-V) Fuse Panels—For Flush Mounting

Number of Circuits	2	4	6	8	10	12
Black Enamel Finish	No. 2B to 12B	\$1.90	\$2.60	\$4.70	\$8.25	\$10.25
Aluminum Finish	No. 2A to 12A	2.45	3.45	5.40	8.70	11.70

SQUARE D Fuse Cabinets

	2	4	6	8	10	12
Series 37000 to 39000	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.
Flush Ser es 37000 Black	\$1.85	\$2.50	\$4.50	\$7.90	\$9.80	\$11.25
" " 37000 Aluminum	2.35	3.35	5.20	8.30	10.00	11.25
Surface Series 39000 Black	1.85	2.60	4.50	7.90	9.80	11.25
NOTE: 2 & 4 Circuit Flush Type are also available with channels for Lath Ends for mounting direct to front side of studding. For these cabinets add to Resale Price each						\$0.20

WESTINGHOUSE Junior Residence Type

	2	4	6	8	10	12
Galvanized or Gray Box	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.
Junior Residence Panels	\$1.70	\$2.50	\$4.50	\$8.65	\$7.90	\$10.00
No. K-64012-21 & 64052-61						
Junior Branch Fuse Attach	1.75	2.60	.....	.....	.....	.....
No. K-62398 & 62399						
Junior Building Panels for Togg'e Switches						
No. K-64034-42 & 64074-81						
	6.65	10.00	13.30	16.00	20.00	

DIAMOND PANELETTES

Surface Type	Flush Type
No.	Circuits
B-4	4
S-4	4
S-6	6
S-8	8
S-10	10
S-12	12
	Size
B-4	7x7 x3
S-4	8x10 1/2 x3 1/2
S-6	8x12 x3 1/2
S-8	8x13 1/2 x3 1/2
S-10	8x15 1/2 x3 1/2
S-12	10x18 x3 1/2
	Price
B-4	\$2.15
S-4	2.50
S-6	3.50
S-8	6.85
F-10	7.40
F-12	9.90

Toggle Flush Type

No. of Circuits	4	6	8	10	12
Cat. Number	FS-4	FS-6	FS-8	FS-10	FS-12
Price	\$6.00	\$9.90	\$14.85	\$17.30	\$19.80

P-SUNDRIES

RUNNING THREAD, PIPE

Price per Foot	1/4"	3/8"	5/8"	3/4"
	\$2.25	\$3.30	\$3.35	\$4.45

SOLDERING PASTE

(Also on Page PL-25.)

Make	2 Oz. Cans	2 Oz. Tubes	4 Oz. Cans	Half Pound Cans	One Pound Cans
Allen	\$.30	\$.40	\$.55	\$.90	\$1.50
Burnley	.20	.....	.30	.40	.70
Crescent	.25	.....	.35	.55	1.00
G. E.	.20	.....	.....	.80	1.50
Highland	.30	.....	.....	.80	1.50
Nokorode	.20	.....	.....	.80	1.50

PAINT & VARNISH

Insulating

Make	Per Pint	Per Quart	Per Gallon	Per Gallon
Armasac	\$.55	\$1.00	\$1.75	\$3.00
Ajax Varnish No. 25	.40	.75	1.35	2.20
Enamelac	.40	.75	1.35	2.20
G. P. Black or Clear	.45	.80	1.45	2.60
Lustorac	.40	.75	1.35	2.20
Voltolac Quick Drying	.40	.75	1.35	2.20
W. P. Black Insulating	.40	.75	1.35	2.20
P. & B. No. 2 Paint	.55	1.00	1.75	3.00
Potthead Compound, per Pound	.....	.....	.....	\$ .55
For Pipe Straps, see Page PL-25. For Solder, Sticks, etc., Page PL-25.				

PLATES & PLUGS, RECEPTACLE

PLATES

For Flush Receptacles

	.040 Thick Brass	Sprayed B. Brass	Sprayed B. Brass	.060 Thick Brass

<tbl_r cells="5" ix="2" maxcspan="1" maxrspan="1" used

CAPS OR PLUGS For Receptacles

Style of Cap	Blades	Price
Composition	Parallel	\$.10
Pony Standard	"	.10
" Bakelite	Polarized	.10
" Large Type	Parallel	.20
" Large Type 10 Amp.	Tandem	.20
" " 20 "	Polarized	.40
" " 30 "	"	.45
" 3 Wire 10 "	"	.45
" 3 " 20 "	"	.65
" 3 " 30 "	"	1.25
" Disapp. Door Plug	"	.70
Brass Covered Standard 10 A.	Parallel	.45
" " 10 A.	Polarized	.45
" Heavy Duty 10 A.	"	.85
" Heavy Duty 10 A.	Tandem	.50
" Heavy Duty 20 A.	Polarized	.95
" 3 Wire 20 A.	"	1.00
Steel Covered 3 Wire 30 A.	"	2.25
" 2 " 30 A.	Parallel	1.85
Knostrain Composition	"	.95
" Brass Covered	Polarized	.95
" " "	Tandem	.85
" Heavy Duty	"	.95
Cord Grip Steel Covered	"	.65
" " "	Parallel	.50
" " 3 Wire 10 Amp.	Polarized	.50
" " 3 Wire 20 Amp.	"	.60
" " 3 Wire 30 Amp.	"	1.70

RECEPTACLES, FLUSH

STANDARD RECEPTACLES OR CONVENIENCE OUTLETS		
Without Plates	Plates Extra	Price
Shallow Comp. Side Wired Single		\$.25
" Porc. " " Duplex		.35
" " " " Single		.25
" " " " Duplex		.35
Deep Comp. Top	Single	.45
" " " " Duplex		.65
" Porc. " " Single		.45
" " " " Duplex		.65

SUNDRY RECEPTACLES

Plates Extra Except Where Marked "X"	Price
For Lift Cover Plate Single	\$.55
" Duplex	.80
x With Rd. Met. Cvr. For 3 1/4 Box Single	.30
" " " Duplex	.45
x " " " 4 " Single	.35
x " " " 4 " Duplex	.50
x With Rd. Brass Plate Small Single	1.25
x " Large	1.35
Edison Screw Base Recp. Single	.25
Disappearing Door Recp. Single	.75
" Duplex	1.10
Screwless Plate Recp. Single	.30
" Duplex	.45
10 Amp. Polariz. For 2 Wire Single	.65
20 " " 2 " " "	1.30
30 " " 2 " " "	2.90
10 " " 3 " " "	1.45
20 " " 3 " " "	1.60
30 " " 3 " " "	4.75

YAXLEY RADIO RECEPTACLES

Nos.	Connections	Price
134	Several loud speakers	\$2.50 \$2.60
135	Loud speaker	1.00 1.10
136	Aerial & ground	1.00 1.10
137	Battery (with plug)	2.50 2.60
138	Electrical only	1.00 1.10
142	Double loud speaker	1.15 1.85
238	Loud speaker, aerial & ground	2.00 2.20
241	Aerial, ground & elect'l	2.00 2.20
242	Loud speaker & elect'l	2.00 2.20
239	Aerial, ground & battery	2.50 2.70
353	Loud speaker, aerial, ground & elect'l	3.00 ...

RECEPTACLE COMBINATIONS

With Plates

Bryant Numbers or Equal

2957-2979	One Flush Recep. One Tumb. Switch Tempus or Brass Plate.	\$1.75
2967-2989	One Comp. Recep. One Tumb. Switch Tempus or Brass Plate.	1.90
117	" Porc. Flush Recep. One Ind. Switch-.060 Brass Plate...	2.00
121	" " " " One Pilot light-.060 Brass Plate...	2.00
514	" Disapp. Door Rec. One Bull's Eye Solid Plate...	5.00
518	" " " " Flush Switch-Bull's Eye Solid Pl...	7.50
467	" Flush Recep. One Flush Switch-Bull's Eye Solid Plate...	6.00
763	Duplex Flush Recep. Bull's Eye Solid Plate...	3.75
558	" Push Switch Bull's Eye Solid Plate...	6.30
427	Bull's Eye Receptacle & Lamp no plate.	1.25
Hubbell Switch Tag Combination #7103 & 7164 without Plate.		1.15

RECEPTACLES, PORCELAIN

PULL TYPE OR LAMPHOLDERS
Keyless & Pull Chain for Lighting

Univ. G.E. No.	Description	Price
832	Porcelain Pull Recept. For 3 1/4 Box 4 Ft. Cord...	\$.85
833	" " " " 3 1/4 Box 7 In. Chain...	.85
835	" " " " 4" Box 4 Ft. Cord...	1.00
836	" " " " 4" Box 7 Inch Chain...	1.00
994 2288	" " " " Ring Recept. with 7" chain-Insltr.-4" cord	.55
995 2292	" " " " 7" chain...	.55
996 2289	" " " " 4" Foot of Cord...	.55
997 2293	" " " " 7" chain & Insulator...	.60
998 2287	" " " " 7" chain & 4 Ft. Cord...	.60
999	" " " " 3 Foot of Chain...	.80

ALABAX RECEPTACLES AND FIXTURES

P & S, Hubbell, Arrow, G. E., Bryant, Weber

Symbol:	Column No. 1—Number of Alabax Fixture.		
Column No. 2—Resale Price Standard White Glaze Finish.	Column No. 2—Resale Price Standard White Glaze Finish.		
Column No. 3—Resale Price All Over Color B-D-E-F-G-H-J-K-L-M.	Column No. 3—Resale Price All Over Color B-D-E-F-G-H-J-K-L-M.		
Column No. 4—Resale Price Stripe Decoration No. 1A-2A-4A.	Column No. 4—Resale Price Stripe Decoration No. 1A-2A-4A.		
Column No. 1	Column No. 2	Column No. 3	Column No. 4
No. 1	No. 2	No. 3	No. 4
Number	White	Color	Stripe
AL 844	\$3.30	\$3.75	....
845	3.60	4.05	....
846	4.15	4.60	5.05
847	2.15	2.30	2.50
848	1.85	2.15	2.35
849	2.30	2.60	2.75
850	2.30	2.60	2.75
851	1.40	1.65	1.85
852	3.30	3.75	4.20
853	3.60	4.05	4.50
854	1.85	2.15	2.30
855	1.85	2.15	2.30
856	2.75	3.20	3.65
857	2.50	2.75	2.95
858	1.20	1.40	1.60
859	1.65	1.90	2.10
860	1.65	1.90	2.10
861	1.65	1.90	2.10
862	2.30	2.60	2.75
863	2.00	2.25	2.45
864	1.95	2.20	2.40
865	2.00	2.30	2.45
866	2.75	3.20	3.45
867	3.05	3.50	3.95
868	2.50	2.75	2.95
869	1.55	1.80	2.00
870	1.20	1.40	1.60
871	1.65	1.90	2.10
872	3.30	3.75	4.20
873	3.60	4.05	4.50
874	2.30	2.60	2.75
875	.95	1.20	1.40
876	1.65	1.90	2.10
877	1.20	1.40	1.60
878	1.65	1.90	2.10
879	1.65	1.90	2.10
880	1.65	1.90	2.10
881	1.25	1.50	1.70
882	1.50	1.75	2.00
883	1.40	1.70	1.85
884	1.70	1.95	2.15
885	1.65	1.90	2.10
886	1.25	1.55	1.70
887	1.20	1.50	1.65
888	1.85	2.15	2.30
889	1.85	2.15	2.30
890	1.85	2.15	2.30
891	2.00	2.25	2.45
892	2.00	2.25	2.45
893	2.00	2.25	2.45
894	2.25	2.55	2.75
895	2.20	2.50	2.70
896	2.20	2.50	2.70
897	2.20	2.50	2.70
898	2.20	2.50	2.70
899	2.20	2.50	2.70
900	2.20	2.50	2.70
901	2.20	2.50	2.70
902	2.20	2.50	2.70
903	2.20	2.50	2.70
904	2.20	2.50	2.70
905	2.20	2.50	2.70
906	2.20	2.50	2.70
907	2.20	2.50	2.70
908	2.20	2.50	2.70
909	2.20	2.50	2.70
910	2.20	2.50	2.70
911	2.20	2.50	2.70
912	2.20	2.50	2.70
913	2.20	2.50	2.70
914	2.20	2.50	2.70
915	2.20	2.50	2.70
916	2.20	2.50	2.70
917	2.20	2.50	2.70
918	2.20	2.50	2.70
919	2.20	2.50	2.70
920	2.20	2.50	2.70
921	2.20	2.50	2.70
922	2.20	2.50	2.70
923	2.20	2.50	2.70
924	2.00	2.25	2.45
925	1.95	2.20	2.40
926	1.95	2.20	2.40</

Sign Receptacles

SIGN RECEPACLES
Edison Base

	Price
Shallow Porcelain Screw Terminals.	\$.30
" " Concealed Cap.	.35
" " with 6" Lead Wires.	.40
" " with Shade Holder Groove.	.40
" " One Piece Screw Terminal.	.20
Deep Porcelain with Screw Terminals.	.30
" " Concealed Cap.	.45
" " with 6" Lead Wires.	.40

Intermediate Base

	Price
Porcelain Cleat Receptacle.	\$.25
" " 2 Screw.	.25
" " with Spring Stud.	.25

R-SUNDRIES

STANDARD ROSETTES—Porcelain

	Price
Cleat—1 Piece Junior Fuseless Rosette.	\$.15
" 2 " Fusible	.20
Concealed—2 Piece Concealed Fuseless Rosette.	.20
" 2 " Fusible	.35
" 2 " For Wood Moulding—Fuseless.	.20
" 2 " Fusible	.35
Box Type—1 Piece Rosette for 3½" Box—Fuseless.	.40
" Brass Covered for Boxes.	.50
For Special Condulet Rosettes—See Pages PL-10, 11 and 12.	1.20

GROUND RODS—Galvanized, not Copperweld

Size	Not Wired Price	Wired Price
5/8" x 5 Feet Each.	\$.35	....
5/8" x 6	.40	....
5/8" x 8	.55	\$.70
5/8" x 10	.60	.75
5/8" x 12	.70	....
5/8" x 14	.85	1.00
5/8" x 17	1.00	....
5/8" x 18	1.15	....
1x8	2.70	3.20

RAWLPLUGS—Standard Types

Number of Rawlplug	Drill Hole	For Screw No.	Price Each
6	5/16	6-7	\$.02
8	5/16	8-9	.03
10	5/16	10-11	.04
12	5/16	12	.05
14	5/16	14	.06
16	5/16	16-18	.08
20	5/16	20-22	.12

Rawlplugs for Lag Screws

Size of Lag Screw	Size of Drill Hole	Size of Rawlplug	Length	Price Each
5/16"	5/16"	13/16"	2"	\$ 1.13
5/16"	5/16"	13/16"	2 1/2"	\$ 1.15
5/16"	5/16"	13/16"	3"	\$ 1.20
5/16"	5/16"	13/16"	3 1/2"	....
5/16"	5/16"	13/16"	4"	....
5/16"	5/16"	13/16"	4 1/2"	....
5/16"	5/16"	13/16"	5"	....
5/16"	5/16"	13/16"	6"	....
5/16"	5/16"	13/16"	7"	....
5/16"	5/16"	13/16"	8"	....
5/16"	5/16"	13/16"	9"	....
5/16"	5/16"	13/16"	10"	....
5/16"	5/16"	13/16"	11"	....
5/16"	5/16"	13/16"	12"	....
5/16"	5/16"	13/16"	13"	....
5/16"	5/16"	13/16"	14"	....
5/16"	5/16"	13/16"	15"	....
5/16"	5/16"	13/16"	16"	....
5/16"	5/16"	13/16"	17"	....
5/16"	5/16"	13/16"	18"	....
5/16"	5/16"	13/16"	19"	....
5/16"	5/16"	13/16"	20"	....
5/16"	5/16"	13/16"	21"	....
5/16"	5/16"	13/16"	22"	....
5/16"	5/16"	13/16"	23"	....
5/16"	5/16"	13/16"	24"	....
5/16"	5/16"	13/16"	25"	....
5/16"	5/16"	13/16"	26"	....
5/16"	5/16"	13/16"	27"	....
5/16"	5/16"	13/16"	28"	....
5/16"	5/16"	13/16"	29"	....
5/16"	5/16"	13/16"	30"	\$.30

NOTE: For Expansion Shields—See Page PL-10.

SOCKETS

COMPLETE STANDARD SOCKETS

Complete With	Pend.	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1 1/8	Pend.
Complete With Standard	\$.25	\$.25	\$.35	\$.45	\$.50	\$.55	\$.60	\$.65	\$.70	Cap.
Key	\$.25	\$.25	\$.35	\$.45	\$.50	\$.55	\$.60	\$.65	\$.70	Brass Shell
Keyless	.23	.23	.33	.43	.47	.53	.57	.61	.65	Brass Sockets
Pull	.35	.35	.45	.55	.60	.65	.70	.75	.80	Ang. Ang.
Push	.30	.30	.40	.50	.55	.60	.65	.70	.75	Grip.

Electrolite Brass Shell

Key	.30	.30	.40	.50	.55	.60	.65	.70	.75
Keyless	.25	.25	.35	.45	.50	.55	.60	.65	.70
Pull	.40	.40	.50	.60	.65	.70	.75	.80	.85
Push	.35	.35	.40	.50	.55	.60	.65	.70	.75

Levolor Pull

Pull	.50	.50	.60	....	....	....	....	....	....
Key	.45	.45	.55	....	....	....	....	....	....
Keyless	.40	.40	.50	....	....	....	....	....	....
Pull	.60	.60	.70	....	....	....	....	....	....
Push	.60	.60	.70	....	....	....	....	....	....

Threaded Catch Brass Sockets

Key	.45	.45	.55	....	....	....	....	....	....
Keyless	.40	.40	.50	....	....	....	....	....	....
Pull	.60	.60	.70	....	....	....	....	....	....
Push	.60	.60	.70	....	....	....	....	....	....

Cold Molded

Key	.50	.65	.70	....	....	....	....	....	....
Keyless	.45	.60	.65	....	....	....	....	....	....
Pull	.60	.60	.70	....	....	....	....	....	....
Push	.60	.60	.70	....	....	....	....	....	....

All Porcelain Sockets

Key	.50	.65	.70	.90	.95	....	....	....	....
Keyless	.45	.60	.65	.85	.90	....	....	....	....
Pull	.90	1.05	1.10	1.30	1.35	....	....	....	....
Push	.60	.75	.80	1.00	1.05	....	....	....	....

Lock Type Brass Shell

Key	1.00	1.00	1.10	1.20	1.25	1.30	1.35	1.40	1.45
Keyless	.95	.95	1.05	1.15	1.20	1.25	1.30	1.35	1.40
Pull	1.25	1.25	1.35	1.45	1.50	1.55	1.60	1.65	1.70
Push	1.00	1.00	1.10	1.20	1.25	1.30	1.35	1.40	1.45

CAPS For Above Sockets

	Pend.	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1 1/8	Pend.
Standard Brass Cap	\$.10	\$.10	\$.20	\$.30	\$.35	\$.40	\$.45	....	....	....
Electrolite	.10	.10	.20	.30	.35	.40	.45	....	....	....
Brass Threaded	"	"	"	"	"	"	"	....	....	....
Cold Molded	"	"	"	"	"	"	"	....	....	....
All Porcelain	"	"	"	"	"	"	"	....	....	....

COMPLETE STANDARD SOCKETS (Continued)

BODIES For Above Sockets

Key	Keyless	Pull	Push	Thru

</tbl_struct

HEAVY DUTY SOCKETS—Benjamin			
Benco Keyless Socket with Clamp Ring #4700 to 4703 Medium Base			\$1.25
without	4712 to 4715	"	1.10
Pull	with	4700 to 4700	2.00
Benco Keyless Socket Copper or Alum.	#4200-1-4-5 & 4335 & 7	"	.80
Brass	#4202-4203-4336	"	.90
Pull	4207-8 4225-26 4236-37 Brass, Copper or Alum.	"	1.55
Mogul	Copper Clad #4210-4207	"	2.25
Benco Threaded Holders Only	234	344	4
Polish. Alum. Weatherprf.—#4215 & 4217	\$.30	\$.55	\$.90
Copper	— 4370-72 & 73	.35	.55
Brushed Brass	— 4377-79 & 80	.35	.55

BENJAMIN MOGUL SOCKETS			
With			With
Without	% or %	% or %	% or %
Yoke	Iron	Alum.	Yoke
One Piece Socket with Lamp Grip	\$1.00	\$1.25	\$1.50
Two Piece Socket with Lamp Grip	1.20	1.45	1.70

BENJAMIN REFLECTOR SOCKETS			
Porcelain or Similar			With Type X or XR Fitting
Medium Base Keyless Tapped $\frac{1}{2}$ - $\frac{1}{4}$ - $\frac{1}{4}$ No. 4605-4609 4650-51 & 65.	\$1.20		
" " Self-Locking $\frac{1}{2}$ - $\frac{1}{4}$ - $\frac{1}{4}$ N. 4528-29-30-32-33	1.60		
" " Shock Absorb. $\frac{1}{2}$ - $\frac{1}{4}$ - $\frac{1}{4}$ No. 4676-77-78-80-81	1.45		
" " Shock Absorb. Self Lock No. 4548-49-50-52-53	2.00		
" " Pull Chain No. 4534-35 & 4660-61-67	2.10		
Mogul Base Keyless Shock Absorbing No. 4670-71-72	2.00		
" " Not Shock Absorbing No. 4656-57 4666	1.65		
If X or XR Fitting not supplied on above sockets deduct	.45		

SWITCHES, FLUSH TUMBLER

Plates & Boxes Extra			
Square Handle Porcelain Cup—Sgl. Pole.			Price
Dble.			\$.35
3 Point.			1.00
4			3.15
Composition Cup—Sgl. Pole.			.85
Dble.			1.35
3 Point.			1.00
4			3.45
Round Handle Porcelain Cup—Sgl.			.35
Dble.			1.00
3 Point.			.50
4			3.15
Composition Cup—Sgl.			1.10
Dble.			1.50
3 Point.			1.40
4			3.45
New 2 Circuit Type Dagle-Twin-Duplex, Multoggle, etc. 2			1.15
Triple-Triplet-Triplex Multoggle, 3			1.50
Single & 3-Way Type			1.35
Lock Type Porcelain Cup—Sgl. Pole.			1.30
Dble.			1.85
3 Point.			1.55
4			3.85
EXTRAS—For Luminous Tip add for Each Handle			.40
For Glo Guide Handle Switches add for Each			1.00

TUMBLER SWITCH COMBINATIONS

With Plates			
Bryant 2957-2979 One Tumb. Sw.—One Flush Recep. Brass or Temp. P.			\$2.00
2959	Pilot Light	.060 Plate	3.00
H & H 8887		Bulls Eye .060	3.25
8809		Recept. Bulls Eye Solid	5.45
8805	Duplex		5.75
H & H 8974	One tumb. sw. and one Con. Outlet		2.00
Hubbell 7163 & 7164	Switch Tap Combination No Plate		2.15

PLATES For Tumbler Switches			
1			Price
Gang	Gang	Gang	Gang
Stamped Brass Sprayed Finish .040 Thick	\$.15	\$.30	\$.45
Brush Brass .040	20	40	1.55
Sprayed .060	20	40	1.70
Brush Brass .060	30	60	1.85
Bakelite or Composition Molded	20	40	.80
Twin & Triple Struck Up Plates	30	30	...
Solid Brass	50	50	...
Hubbell Bakelite Screwless Plates	.60	1.10	1.00
Bryant DeLuxe Wood Inlaid any Finish	2.35	4.10	6.00
All Metal	.85	1.50	2.10
Guth Porcelain Enamel Plates	.30	.65	1.00
Glass Mirror Plates	1.00	1.75	2.50
Combination Switch & Receptacle Plate Molded			.40
Brass .040 thick			.50

SWITCHES, FLUSH PUSH

Plate & Boxes Extra			
Standard Shallow Type Porcelain Cup—Single Pole.			Price
Double			\$.35
3 Point			.50
4			3.15
Deep Type Porcelain Cup—Single Pole			.70
Double			1.15
3 Point			1.15
4			3.15
Special High Grade	—Single Pole		1.15
Double			1.50
3 Point			1.50
4			3.15
Lock Type Porcelain Cup—Single Pole			1.45
Double			1.85
3 Point			1.85
4			3.85
Electrolizer Non-Indicating			1.75
Indicating			1.90
Extra for Luminous Button Add Per Switch			.40

PUSH SWITCH COMBINATIONS

With Plates			
Bryant 117 D. P. Indicat. Switch Flush Receptacle & .060 Plate.			\$.00
413	One Push Switch-Bulls Eye and Solid Plate.		4.00
518	Disap. Door Recep. Bulls Eye—Solid Plate.		7.50
465	D. P. Flush Switch & Pilot Lamp .060 Plate.		3.50
467	Flush Switch—Flush Recep.—Bulls Eye—Solid Plate.		6.00
558	Duplex		6.30
H & H 3752	Bulls Eye—Solid Plate		4.00
3750	Duplex Recep. Solid Plate		5.50
8810	Single		5.30

PLATES For Flush Push Switches

PLATES For Flush Push Switches			
Description			Price
Stamped Brass Sprayed Finish .040 Thick	\$.15	\$.30	\$.45
Brush Brass .040	20	40	1.55
Sprayed .060	20	40	1.70
Brush Brass .060	30	60	1.85
Bakelite or Composition Molded	20	40	.80
Guth Porcelain Plates	2.25	3.90	6.40
Glass Mirror Plates	.85	1.50	2.10
Combination Push & Receptacle Plates .060 Brass	.30	.65	1.00
Molded			.40
Guth Enamelled			.65
Mirror Glass			1.75

SWITCHES, SURFACE SNAP

METAL COVERED SNAP SWITCHES			
Poles	Volts	Type	5 10 20 30
Single	125	Non-Indicating	Pony \$.35
		Indicating	.40
		Standard	.55 \$.75 \$1.45 \$2.10
		Indicating	.65 .85 1.60 2.20
Double	250	Non-Indicating	.90 1.10 2.20 2.55
		Indicating	1.05 1.15 2.40 2.70
Triple	250	Non-Indicating	1.20 1.35 2.60 3.00
3-Way	125	Non-Indicating	.90 1.25 2.25 2.70
4-Way	250	Non-Indicating	1.30 2.85 6.00 ...
Electrolizer		Non-Indicat. 110V.	1.35 1.35 2.10 2.25
		Indicating 110V.	1.50 1.50 2.25 ...

ALL PORCELAIN SNAP SWITCHES

ALL PORCELAIN SNAP SWITCHES			
Poles	Volts	Type	5 10 20 30
Single	125	Non-Indicating	Pony \$.50
		Indicating	.55
		Standard	.65 \$.85 \$1.60 \$2.40
		Indicating	.70 .95 1.75 2.55
Double	250	Non-Indicating	.95 1.20 2.45 2.85
		Indicating	1.10 1.35 2.60 3.00
3-Way	125	Non-Indicating	.95 1.35 2.60 3.00
4-Way	250	Non-Indicating	1.50 3.00 ...
Electrolizer		Indicating	1.55 1.55 2.25 ...

TUMBLER OR TOGGLE SNAP SWITCHES—Metal

TUMBLER OR TOGGLE SNAP SWITCHES—Metal			
125-250 Volt		Non-Point	Point
5 Amp. Closed or Slott. Base		\$.35	\$.80
10		1.10	1.25
			\$1.40

SNAP SWITCHES FOR WOOD MOLD, CONDULETS, ETC.

SNAP SWITCHES FOR WOOD MOLD, CONDULETS, ETC.			
Metal Covered	All Porcelain	Non-Indicating	Indicating
5 Amp. 125 Volts		\$.65	\$.60
125-250 Volt		\$.85	\$.80
5 Amp. 125 Volts		1.20	1.15
Three Point		1.20	1.20
Electrolizer		1.40	1.40

PARTS FOR SNAP SWITCHES

PARTS FOR SNAP SWITCHES			

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Such recognition

Not a new role for Crescent, but one now recognized by authority—a niche in the Industrial Hall of Fame. Forty years dedicated to the policy of "Quality First" and providing an unfailing source of supply to the electrical trades has placed Crescent among the leaders of today's industry.

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Trenton, N. J.

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Ilg Electric Ventilating Co. 2879 North Crawford Avenue CHICAGO, ILLINOIS

Ventilation

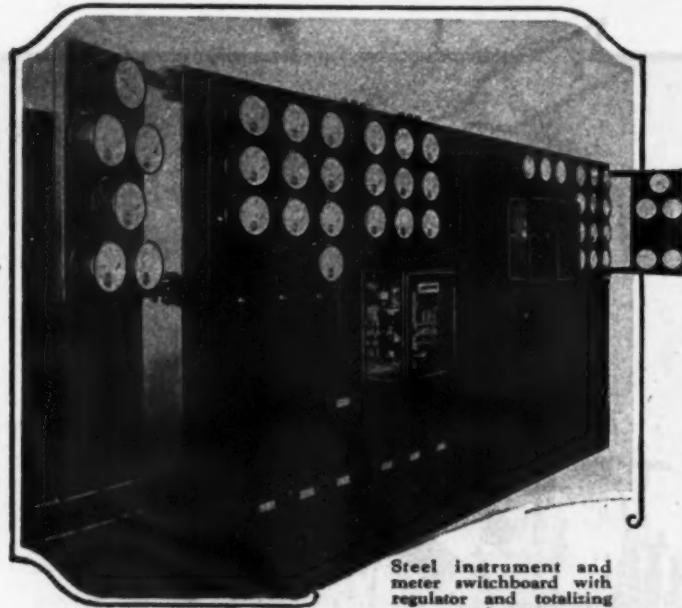
ILG ELECTRIC VENTILATING CO.
2879 North Crawford Avenue, Chicago, Ill.

Without obligation send me the new Ilg Dealers Manual and information about your Special Window Display Offer.

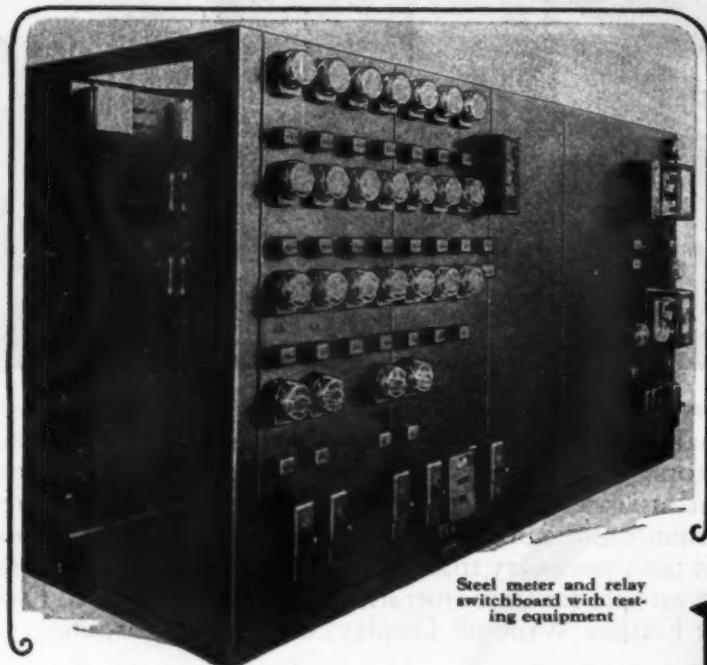
Name _____

Full Address _____

My Jobber's Name is _____



Steel instrument and
meter switchboard with
regulator and totalizing
equipment



Steel meter and relay
switchboard with test-
ing equipment

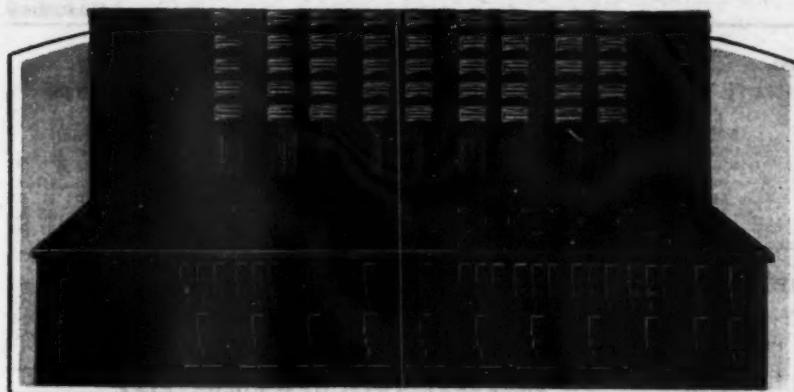


Feeder switchboard
steel construction
including mimic bus

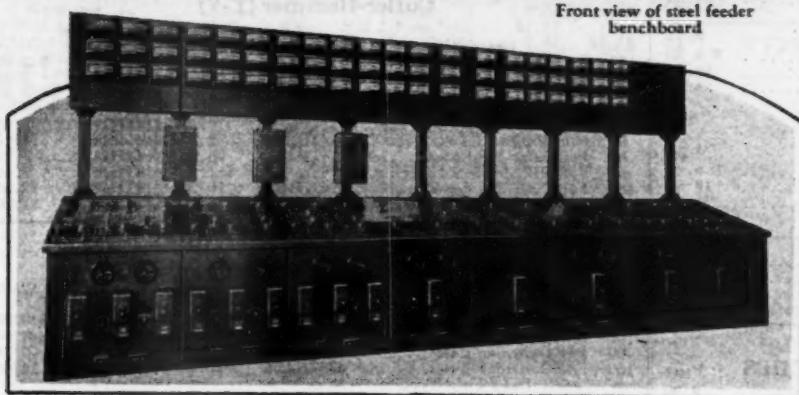
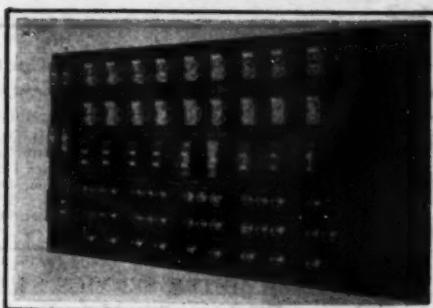
Switchboards



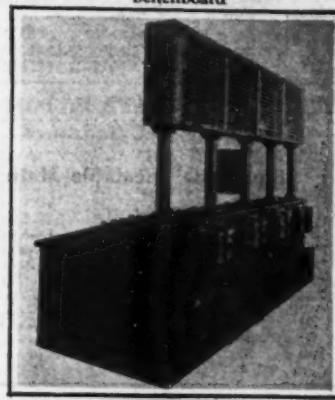
JOIN US IN THE GENERAL ELECTRIC HOUR, BROADCAST EVERY
GENERAL
 GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y.



Front view of steel feeder benchboard



Steel generator benchboard



Generator benchboard of steel construction

of steel

THE rapidly extending use of steel for the construction of conventional switchboards has resulted in their adoption for many important installations.

G-E steel panels are constructed in one piece of stretcher-leveled steel, which has a smooth scale-free surface. The form of construction employed provides the necessary rigidity.

Because of the comparative lightness and great strength of this material, the panels are free from breakage and rough-

ing during shipment and erection, and installation is easy. The nature of the material permits a variety in construction not hitherto permissible. A dull-black lacquer finish that does not reflect light gives the panels a neat and pleasing appearance.

The adoption of standard unit construction facilitates panel alignment and switchboard extensions, alterations, and additions.

Write to the nearest G-E office for complete information on steel panels.

461-23

SATURDAY AT 9 P.M., E.S.T., ON A NATION-WIDE N.B.C. CHAIN
E L E C T R I C
 SALES OFFICES IN PRINCIPAL CITIES

METER SERVICE SWITCHES—Continued

NON-METER TEST TYPE

Number	Amps.	Pole	Fused	Neutral	Description	Price
26311	30	3	2	Plug Solid	Plug Type Fuse Dead	\$ 2.40
26351	30	3	2	Cart.	Cart. Type Fuse Dead	3.75
SK-615	30	3	2	Plug	Switched Plug Type Fuse Dead	4.30
SK-650	30	3	2	Cart.	Cart. Type Fuse Dead	4.30
SK-660	60	3	2	"	Cart. Type Fuse Dead	11.70
SK-674	100	3	2	"	Cart. Type Fuse Dead	19.20

POLYPHASE METER SERVICE SWITCHES

"Square D" Accessible Main Fuse Type

METER TEST TYPE

Number	Amp.	Pole	Fused	Price
30391	30	3	3 Cart.	\$ 9.90
30392	60	3	3 "	20.35
30393	100	3	3 "	30.00

NON METER TEST

Number	Amp.	Pole	Fused	Price
10391	30	3	3 Cart.	\$ 9.30
10392	60	3	3 "	18.60
10393	100	3	3 "	28.25

"Square D" Sealable Main Fuses

METER TEST TYPE

Number	Amp.	Pole	Fused	Price
36351	30	3	3 Cart.	\$ 9.20
36352	60	3	3 "	17.80
36393	100	3	3 "	26.50

NON METER TEST

Number	Amp.	Pole	Fused	Price
SK-671	30	3	3 Cart.	\$ 4.30
SK-672	60	3	3 "	11.70
SK-673	100	3	3 "	19.20

FITTINGS FOR STANDARDIZED SWITCHES

End Walls for 30 Amp. Switches	Price
" 60 & 100 Amp. Switches	.80
Trough Closing Plates No. 20533 & 34	.10
Connecting Trough No. 20733-314" Long	.45
" 20738-81/2" "	.80
Universal End Wall & Shutters	.30
Meter Shutter only No. 24388	.15

TYPE C

"Square D" Single Throw, Industrial Switches
Quick Break Only

250 Volts Fusible			250V. DC & 500V. AC Fused & Unfused		
Amps.	2 Pole	3 Pole	Amps.	2 Pole	3 Pole
30	#85251 \$ 3.20	#80351 \$ 5.20	30	500 Volt Fused	#46341 \$ 8.65
60	#46252 \$ 8.20	#46352 10.00	60	#41242 \$ 8.20	#41342 8.65
60	Solid Neutral #47312	9.10	60	500 Volt Fused	#46342 10.95
100	#45253 \$12.75	#45353 15.50	100	#41243 \$10.95	#41343 12.30
100	Solid Neutral #48312	14.60	100	500 Volt Fused	#46343 17.30
200	#46254 20.00	#46354 26.40	200	#41244 \$19.10	#41344 22.75
200	Solid Neutral #47314	22.75	200	500 Volt Fused	#46344 32.80

TYPE A

"Square D", Industrial Quick Make & Break, Single Throw

250 Volts Fusible			250-500 & 600 Volts Unfusible		
Amps.	2 Pole	3 Pole	Amps.	2 Pole	3 Pole
x30	#80251 \$10.90	#80351 \$12.75	x30-60	#81252 \$ 9.55	#81352 \$11.40
60	#86252 13.65	#86352 17.30	30-60	#81242 11.85	#81342 14.60
100	#86253 20.90	#86353 22.30	100	#81243 20.00	#81343 21.85
200	#86254 32.75	#86354 36.40	200	#81244 25.50	#81344 30.95
x60	Amp. Sw. with 30 Amp. Spacing		(x 250 Volts only)		

30 AMP. TYPE C

"Square D", Industrial, Single Throw

250 Volts	2 Pole	Description	3 Pole	Single Throw
No. 83251	\$ 3.20	Quick Make & Break	No. 83351	\$ 5.20
91251	2.65	Not Quick Break	91351	4.00
x90251	7.75	Quick Break Only	x90351	10.00
		(x 60 Amp. Switches with 30 Amp. Clips).		

MOTOR STARTERS

"Square D", Quick Make & Break, Single Throw

Numbers & Types	Amps.	Volts	2 Pole	3 Pole	4 Pole
76251-351-451 Cover Control	30	250 V.	\$15.50	\$16.40	\$22.75
76352-76452	60	250 V.	.....	22.75	31.75
76341-76441	30	500-600 V.	.....	22.75	31.75
76342	60	500-600 V.	.....	32.75	.....
69251-351-451 without Cover Cont.	30	250 V.	13.65	14.60	20.95
69352-69452	60	250 V.	.....	20.95	30.00
69341-69441	30	500-600 V.	.....	20.95	30.00
69342	60	500-600 V.	.....	31.00	.....
75251-351 Time Protective	30	250 V.	6.40	6.85	.....
75341 & SK2054 Time Protective	30	500-600 V.	.....	11.80	13.65
No. 98251 For Small AC & DC Motors up to 1/4 H. P. 230 Volts AC.					\$1.85

TYPE "C" SWITCHES

Cutler-Hammer (T-V) Single Throw Industrial Type Series 4131

250 Volts DC or AC Fusible	500-600 Volts AC Fusible					
Amps	2 Pole	3 Pole	Amps	2 Pole	3 Pole	
30	4131H2	\$ 3.15	4131H3	\$ 5.15	4131H7	\$ 8.55
60	4131H3	8.10	4131H4	9.90	4131H8	9.90
100	4131H4	12.60	4131H5	15.30	4131H9	14.40
200	4131H5	19.80	4131H6	26.10	4131H10	29.80
400	4131H6	48.00	4131H17	66.00	4131H11	64.80
						4131H28
						81.00

ENTRANCE SWITCHES, LIGHT TYPE
Cutler-Hammer (T-V)

2 Pole	3 Pole		
Amps	Description	Numbers	Price
30	For Plug Fuses	4141H1&2	\$ 1.65
30	2 Blades -2 Fuses	4141H4	1.80
30	For Cartridge Fuses	4141H6&8	1.80
30	For Cartridge Fuses	4141H7	2.70
30	For 2 Cart. Blades-2 Fuses	4141H11	3.25
30	Non-Fusible	4141H23	2.35
60	For Cartridge Fuses	4141H13	6.65
60	For 2 Blades & 2 Fuses	4141H16	7.40
100	For Cartridge Fuses	4141H18	10.20
100	For 2 Blades & 2 Fuses	4141H21	11.80

METER SERVICE SWITCHES

Cutler-Hammer (T-V) Without End Walls

Meter Test Type	Live Fuse Type	Without End Walls
		Test Type
30	For Plug Fuses	4307H1&5
30	For Cartridge Fuses	4307H2&6
60	For Cartridge Fuses	4307H3&7
100	For Cartridge Fuses	4307H4&8
	Dead Fuse Type	
30	For Plug Fuses	4309H1
30	For Cartridge Fuses	4309H4
60	For Cartridge Fuses	4309H8
100	For Cartridge Fuses	4309H10&11

SAFE-LOCK METER SERVICE SWITCHES

Cutler-Hammer (T-V) Without End Walls

Accessible Main Fuses
Without End Walls

30	40	50	60	70	80	90	100
4325H1&2	\$ 3.70	4325H3	\$ 4.20				
4325H4&5	4.50	4325H6	4.50				
4325H7&8	16.80	4325H9	17.70				
4325H10&11	25.60	4325H12	27.40				

POLYPHASE METER SERVICE SWITCHES

Style & Numbers
End Walls 30 A. 60 A. 100 A.

Meter Test Sealed Fuse Type No. 4315H1-2-3 Yes \$9.50 \$17.60 \$27.30

Meter Test Accessible Fuse Type No. 4329H18-19-20 No 9.95 20.35 30.00

Non-Meter Test Accessible Fuse Type No. 4329H25-26-27 No 9.35 18.60 28.25

UNIVERSAL METER SERVICE SWITCHES

METER TRIMS—END WALLS—TROUGHS
Westinghouse

		60 & 100
One Piece Meter Trim		30 Amp.
Blank End Wall or Shutter Type End Wall		30
Shutter Type Meter Trim or Adaptor Trim		.80
New Universal Trim with slide		.30
Replacement Plate or Adapting Plate		.15
Wiring Trough—2-3 & 4" long	\$.45	\$.50
Fuse Receptacle #R57252	.30	.55
		Less Fuses, \$1.25

QUICK BREAK ONLY

Industrial Westinghouse "WK-62" Type "C"

Amps.	250 Volts Fusible		500 Volts AC Fusible	
	2 Pole	3 Pole	2 Pole	3 Pole
30	#62100 \$ 5.40	#62101 \$ 6.75	#62200 \$ 9.00	#62201 \$ 8.55
60	62103 8.10	62104 9.90	62203 9.10	62204 10.80
100	62106 12.60	62107 15.30	62206 14.40	62207 17.10
200	62109 19.80	62110 26.10	62209 28.80	62210 32.40
Amps.	250-500 Volts Non-Fusible		600 Volts Non-Fusible	
	2 Pole	3 Pole	3 Pole	4 Pole
30	#62047 \$ 7.65	#62048 \$ 8.10	#62054 \$ 13.05	#62055 \$ 18.90
60	62013 8.10	62014 8.55	62057 17.10	62058 26.10
100	62016 10.80	62017 12.15	62059 27.90	62061 44.10
200	62019 18.90	62020 22.50	62060 27.90	62061 44.10

Industrial Westinghouse "WK-66" Quick Make & Break

Amps.	250 Volts Fusible		500 Volts AC Fusible	
	2 Pole	3 Pole	2 Pole	3 Pole
30	#66100 \$ 10.80	#66101 \$ 12.00	#66154 \$ 14.40	#66155 \$ 18.00
60	66103 13.50	66104 17.10	66157 16.20	66158 18.90
100	66106 20.70	66107 27.00	66160 25.20	66161 28.80
200	66109 32.40	66110 36.00	66163 39.60	66164 45.00
Amps.	250-500 Volts Non-Fusible		600 Volts Non-Fusible	
	2 Pole	3 Pole	3 Pole	4 Pole
30	#66050 \$ 11.70	#66051 \$ 13.95	#66054 \$ 17.10	#66049 \$ 21.60
60	66053 11.70	66054 14.40	66057 24.75	66058 32.40
100	66133 19.80	66134 21.60	66060 33.30	66061 46.80
200	66136 25.20	66137 30.60	66060 33.30	66061 46.80

GENERAL UTILITY SWITCHES
Noark Closed Ends

Numbers	Amps.	Volts	Fused For	2 Pole	3 Pole
8283	30	125	For Plug Fuses	\$ 1.65	.....
8383-8483-8393	30	125	"	1.80	\$ 2.50
8683-8693	30	125	"	2.75	3.20

METER SERVICE SWITCHES
Noark Sealed Service SECO Without End Walls

Amps.	Test Type		Non Test Type		
	2 Pole	3 Pole	2 Pole	3 Pole	
30A	Plugs	No. 9543 \$ 3.25	No. 9523 \$ 4.45	No. 8543 \$ 2.85	No. 8523 \$ 3.00
30A	Enclosed	No. 9563 3.75	No. 9533 4.00	No. 8563 3.40	No. 8533 3.55
30A	Plug & Enc.	No. 9573 3.50	.....	No. 8573 3.15	No. 8993 2.40
60A	Enclosed	No. 9566 15.05	No. 9536 15.95	No. 8566 14.20	No. 8536 15.05
60A	"	No. 9576 14.15	.....	No. 8576 23.30	.....
100A	"	No. 9581 23.85	No. 9531 25.60	No. 8581 23.00	No. 8531 23.85

Noark Accessible Service ACCO Without End Walls

Amps.	Test Type		Non Test Type		
	2 Pole	3 Pole	2 Pole	3 Pole	
30A	Plugs	No. 9343 \$ 3.65	.....	No. 8343 \$ 3.35	.....
30A	"	No. 9353 3.95	No. 9323 \$ 4.45	No. 8353 3.65	No. 8323 \$ 3.95
30A	Enclosed	No. 9363 4.85	No. 9333 4.85	No. 8363 4.55	No. 8333 4.55
60A	"	No. 9366 16.80	No. 9336 17.70	No. 8366 15.95	No. 8336 16.80
100A	"	No. 9381 25.60	No. 9331 27.40	No. 8381 24.75	No. 8331 25.60

Noark Universal Without End Plates

No.	1971123	—Without End Walls	\$ 3.45
9723	4.65
972123	4.30
973333	3.75
9753 & 0793	5.20
975333-079333	4.85

Noark Doall Without End Plate

Amps.	2 Pole		3 Pole	
	Numbers	Price	Numbers	Price
30A	91123-91123	\$ 2.70	91233-91433	\$ 3.45
30A	92323-92123	3.05	92233-92433	3.75
60A	92316-92126	8.45	925336	8.90
100A	923121-921221	15.05	925331	15.95

NUBLADE SWITCHES

Noark Fusible

Amps.	250 Volts Fusible		500 Volts AC Fusible	
	2 Pole	3 Pole	2 Pole	3 Pole
30	8223 \$ 4.50	8223 \$ 5.05	8423 \$ 9.00	8433 \$ 8.55
60	8226 8.10	8226 9.90	8426 9.90	8436 10.80
100	8221 12.60	8221 15.30	8421 14.40	8431 17.10
200	8222 19.80	8222 26.10	8422 28.80	8432 32.40
400	8224 48.60	8224 66.60	.....	.....

Noark Not-Fusible—Quick Break

Amps.	Volts		2 Pole		3 Pole		4 Pole	
	No.	Price	No.	Price	No.	Price	No.	Price
30	8723	\$ 2.70	8733	\$ 4.05	8743	\$ 8.10	.....	.....
500 AC	8623	7.65	8626	8.10	8643	10.80	.....	.....
250-500	8626	8.10	8636	8.55	8646	13.50	.....	.....
250-500	8621	10.80	8631	12.15	8641	20.70	100	.....
250-500	8622	18.90	8632	22.50	8642	37.80	200	.....
250-500	8624	39.60	8634	54.00	8644	86.40	400	.....

ACCESSORIES FOR NOARK SWITCHES

Single Piece End Wall for 30 Amp. Switches	\$.30	For 60 & 100 Amp.	\$.80
Shutter for	"	30	.15
Universal End Wall No. 909103	.....	60	.40
Blanking Side No. 908103-908203	.....	100	.15
Trough—3-4 & 6-40—6" 45°—7"	.....	60	8"—\$.55—9"
Cabinet Fuse Block No. 902413	.....	125	1.25

POLYPHASE

Noark Switches Without End Walls

Amps.	Volts	Main Entrance	
		"Doail" & 3 Wire	"Acco" Quad Break
30A	No.	Price	No.
60A	No.	Price	No.
100A	No.	Price	No.
Amps.	Volts	Meter Service	
		Numbers	Price
30A	891233-811233	\$ 2.70	812333-814333
60A	891236-811236	16.65	855336
100A	891231-811231	26.15	875331

MAIN ENTRANCE SWITCHES

Noark Doall Without End Walls

Amps.	Fused For	2 Pole		3 Pole	
Numbers	Price	Numbers	Price		

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Switches

30 AMP. SERVICE ENTRANCE SWITCHES
Bulldog

2 Pole—125 Volt—Fusible—For Plug Fuses No. JE211 S & P.....	\$1.65
2 " 125 " " " Quick Make & Break JF211S.....	2.70
2 Pole—250 Volt—Fusible—For Cart. Fuses SF221 S & P.....	2.50
2 Pole—250 Volt—Not Fusible—For Cart. Fuses SN221 S & P.....	2.70
3 Pole—125 Volt—Fusible—For Plug Fuses No. JE311 SP & PG.....	3.00
3 Pole—125 Volt—Fusible—For Plug Fuses Quick Make & Break JF311S	4.35

"TYPE A"

Bulldog Single Throw Quick Make and Break

	2 Pole	3 Pole		
Number	Price	Number	Price	
250 Volts Fusible				
30 Amp.	SF 221 \$ 10.80	SF-321	\$ 12.60	
60 "	SF-222	13.50	SF-322	17.10
100 "	SF-223	20.70	SF-323	27.00
200 "	SF-294	32.40	SF-324	36.00
400 "	SF-225	63.00	SF-325	81.00
500-600 Volts Fusible				
30 Amp.	For	SF-351	18.00	
60 "	2 Pole	SF-352	19.90	
100 "	See 600 Volt	SF-353	28.80	
200 "	Fusible	SF-354	45.00	
400 "	Below	SF-355	88.00	
250-500-600 Not Fusible				
30-40 Amp.	SN-251 \$11.70	SN-351	13.95	
100 "	SN-253	19.80	SN-353	21.60
200 "	SN-254	25.20	SN-354	30.60
400 "	SN-255	54.00	SN-355	63.00
600 Volts Fusible				
30 Amp.	SF-261	16.20	SF-361	19.30
60 "	SF-262	17.10	SF-362	19.80
100 "	SF-263	27.00	SF-363	31.70
200 "	SF-264	42.00	SF-364	48.60
400 "	SF-265	93.00	SF-365	123.00
600 Volts Not Fusible				
30-60 Amp.	SN-261	12.60	SN-361	16.20
100 "	SN-263	20.25	SN-363	24.75
200 "	SN-264	26.50	SN-364	33.75
400 "	SN-265	65.50	SN-365	97.75
250 Volts Fusible				
30 Amp.	Number	Price		
60 "	SF-421	\$ 16.20		
100 "	SF-422	21.60		
200 "	SF-423	36.00		
400 "	SF-424	54.00		
500-600 Volts Fusible				
30 Amp.	SF-451	21.60		
60 "	SF-452	23.40		
100 "	SF-453	47.80		
200 "	SF-454	57.60		
400 "	SF-455	126.00		
250-500-600 Not Fusible				
30-60 Amp.	SN-451	19.80		
100 "	SN-453	28.80		
200 "	SN-454	40.00		
400 "	SN-455	103.50		
600 Volts Fusible				
30 Amp.	SF-461	23.40		
60 "	SF-462	25.20		
100 "	SF-463	39.60		
200 "	SF-464	59.40		
400 "	SF-465	144.00		
600 Volts Not Fusible				
30-60 Amp.	SN-461	21.75		
100 "	SN-463	29.70		
200 "	SN-464	43.65		
400 "	SN-465	120.60		

COMPENSATOR SWITCHES "A"

Bulldog Quick Make & Break Fusible

Amps.	250 Volt AC		
	3 Pole	4 Pole	
30 A.	SF321 C \$16.20	SF421 C \$ 21.60	
60 A.	SF322 C 20.25	SF422 C 26.10	
100 A.	SF323 C 31.50	SF423 C 46.80	
200 A.	SF324 C 45.90	SF424 C 64.80	
400 A.	SF325 C 94.50	SF425 C 129.00	

Amps.	3 Pole	4 Pole
30 A.	SF351 C \$20.70	SF451 C \$32.40
60 A.	SF352 C 21.00	SF452 C 36.00
100 A.	SF353 C 33.75	SF453 C 61.20
200 A.	SF354 C 50.40	.....
400 A.	SF355 C 105.60	.....

MOTOR STARTERS
Bulldog

	3 Pole	
30 Amp-Type C-Pore. Base-110 to 440 Volt	JM-321S \$ 6.75	
30 " " C-Slate " 440 & 550 "	JM-351 11.70	
30 " " A 250 Volt	MF-321 17.00	
30 " " A 500 "	MF-351 23.75	
60 " " A 250 "	MF-322 23.50	
60 " " A 500 "	MF-352 28.80	
	4 Pole	
30 Amp-Type C-Pore. Base-110 to 440 Volt	.....
30 " " C-Slate " 440 & 550 "	MF-421 \$22.80	
30 " " A 250 Volt	MF-451 35.25	
30 " " A 500 "	MF-422 29.45	

NOTE: For Bulldog Switches not listed deduct 10% from Bulldog Lists.

SMALL ENTRANCE SWITCHES
Columbia, 30 Amp.

Description		2 Pole	3 Pole
Single Fused	Single Blade-125 Volt-Plug Fused	320-321	\$1.50
Double "	Double 125 "	1930	1.55
" "	" 250 "	3930	1.90
" "	" 250 " Cartridge Fused	322	2.85
" "	" 250 "	422	2.60

Description		3 Pole
Single Fused-Single Blade-125 Volt-Plug Fused		1931-2 \$2.15
Double "	Double 125 "	3930-1 2.50
" "	" 250 "	323 4.00
" "	" 250 "	423 4.50

BRANCH CIRCUIT ENTRANCE SWITCHES

30	2	4	6	8
Amp.	Circuit	Circuit	Circuit	Circuit
Series	2 Pole	2 Pole	3 Pole	3 Pole
2401 to 2406	\$4.00	\$5.00	\$5.35	\$6.00
3401 to 3406	5.00	6.35	6.65	7.35
3501 to 3506	4.85	6.00	6.35	7.00

INDUSTRIAL SWITCHES

Columbia		Series 70 Type C Fusible	
Amps	2 Pole	Number	Price
250 Volts	30A C7001	\$ 9.40	C7002 \$11.50
Fusible	60A C7004	12.10	C7005 15.75
Quick Make	100A C7007	19.10	C7008 24.00
& Break	200A C7010	28.35	C7011 38.00

Series 70 Type A Fusible		Series 71-500 Volts Fusible	
Amps	2 Pole	Number	Price
250 Volts	30A A7001	\$10.45	A7002 \$13.00
Fusible	60A A7004	13.30	A7005 17.55
Quick Make	100A A7007	21.75	A7008 27.00
& Break	200A A7010	31.00	A7011 39.00

Series 73-500 Volts Unfused		Series 72-600 Volts Fusible	
Amps	2 Pole	Number	Price
500 Volts	30A 7301	\$11.00	7302 \$12.90
Quick Make	60A 7304	11.00	7305 19.40
& Break	100A 7307	17.35	7308 19.50
	200A 7310	24.00	7311 38.80

Series 74-600 Volts Unfused		Series 20-250 Volts Fusible	
Amps	2 Pole	Number	Price
600 Volts	30A 7401	\$11.90	7402 \$14.50
Quick Make	60A 7404	12.60	7405 15.10
& Break	100A 7407	19.20	7408 21.75
	200A 7410	25.50	7411 39.65

Series 23-250-500 Volts Unfused		Series 20-250 Volts Fusible	
Amps	2 Pole	Number	Price
Quick Break	30A 2322	\$ 4.85	2323 \$ 6.35
Only	60A 2325	9.10	2326 9.70
250 Volts	100A 2328	10.95	2329 13.55
	200A 2331	19.35	2082 24.90

Series 30—Quick Break—250 Volts For Meter Trims		100 Amp.	
30 Pole	3022	3025	30 Amp.
30 Pole	3023	7.65	3026 10.00

2



SNAP SWITCHES SURFACE TUMBLERS

The first and favorite All-purpose Switch

INTO pioneer jobs went the H & H Snap Switch; into surface-wired jobs of the present day goes the same indomitable Snap Switch . . . So soundly designed, so sturdily built that newer switches could offer no more. The Contractor's favorite nearly 40 years back is *still* his favorite in its field.

In the Surface Tumbler shown above you see a tumbler mechanism in place of the rotary. With the "snap-on" cover to speed-up wiring; saves fussing with tiny screws. The latest style of surface switch — with the old Reliability of your H & H "Snaps." Catalogue Number 610; data-sheet on request.

HART & HEGEMAN DIVISION
THE ARROW-HART & HEGEMAN ELECTRIC CO.
HARTFORD, CONN. MAKERS OF ELECTRIC SWITCHES SINCE 1890

MERELY to fill the office safe is no real problem.

But to fill it with what?

With the fair profits of correctly estimated jobs? Or the shavings from sharpened pencils?

More than one electrical contractor has found the latter substance almost too easy . . . but not very satisfying.

The natural consequence has been that contractors have begun to take stock of the fruits of their labor.

Where are they going? they want to know. What are they getting out of their work?

The realization is coming quite definitely that a general ignoring of costs does no good to the contractor, to the industry, or to the community that supports the industry.

The electrical contractor is getting more and more to look upon himself as an important servant to the community. He can point to comforts he has suggested, to labor-saving conveniences he has introduced.

If he can point also to solid, enduring work, then surely, he has done his part well.

But here, some contractors say, comes the big question:

"Who will pay for solid, enduring work?"



Sure, a sharpened pencil will fill it . . .

It's the old story. Intelligent competition or unintelligent competition? One has built up big businesses, whole industries, entire communities. The other has ruined individuals and enterprises. Which do electrical contractors want?

The answer is, of course, the Public.

The Public doesn't object

The Public by and large, has proven itself pretty willing and able to pay fairly for value received—when it knows that it is receiving full value . . . That last is important.

The Public took its vacation last summer and will buy its new car next spring because these things were proven to it to be worth the price of admission (irrespective of other things the same Public may need as much or more).

Will people ever look on quality wiring work as so much more essential than the inferior kind that they'll pay the difference to be sure of what they are getting?

There are sheafs of experience to prove that they will.

Wanted: more quality

Contractors in small towns, contractors in big cities, contractors in medium-sized cities, go on record to that effect.

Not every customer can be convinced yet. That Utopia is not with us. But every customer convinced brings the industry that much nearer . . .

To this end this Company contributes its own high standards in electrical materials and its support in advertising.

No. 8 of a series dealing with the every-day problems of the electrician.

Graybar

Successor to Western Electric Supply Dept.



*The Graybar Tag—
symbol of distribution*

New ARROTEX Receptacles of BAKELITE

DUPLEX - No. 1912 - G



Lustrous BAKELITE Convenience Outlets . . . measuring the new Finding Ridge, which steers the plug into the slots from any point of contact. A press—and the prongs twist "home" . . . Standard Duplex Receptacle, No. 1912. With Plaster Bars, No. 1912-G. Standard Single Receptacle, No. 1911. With Plaster Bars, No. 1911-G. (Plaster Bars advance \$1.00 extra.)

SINGLE - No. 1911 - G



ARROW ELECTRIC DIVISION

THE ARROW-HART & HEGEDUS ELECTRIC CO.
HARTFORD, CONNECTICUT



Difficult Installations Made Easier

**with Appleton No-Thread
Malleable Unilets**



The introduction, by the Appleton Electric Company, of threadless conduit fittings made possible installations that could not have been accomplished before. That was in 1907. In 1909 they were introduced to the industry in Appleton advertising. Improvements were made and the name "No-Thread" Unilets adopted in October, 1926.

Ended was all trouble with bent conduit,

corners and cramped working space. The speed of installing these modern conduit fittings is amazing. And now, made of malleable iron and cadmium coated, Appleton No-Thread Malleable Unilets show the greatest resistance to corrosion, vibration and shocks.

They are made in shapes and sizes to fit every possible need. Send for our new catalog. Tear out the coupon and mail it now.

Appleton No-Thread Unilets are listed as Standard by Underwriters' Laboratories in ½-inch to 4-inch sizes, inclusive

SOLD THROUGH JOBBERS

APPLETON ELECTRIC COMPANY

1704 Wellington Ave., Chicago, U. S. A.

New York—150 Varick St.

San Francisco—655 Minna St.

Los Angeles—340 Azusa St.

Seattle—628 Railroad Ave.



APPLETON ELECTRIC COMPANY
1704 Wellington Avenue, Chicago

Gentlemen:

Please send us copy of your new bulletin 9-UA on Malleable No-Thread Unilets, together with prices.

Name _____

Address _____

City _____ State _____

APPLETON
No-Thread Malleable
UNILETS

Reg. U. S. Pat. Off.
The Original Threadless Conduit Fittings

Wadsworth

30 Amp. Switches		30 Amp. Switches		30 Amp. Switches		30 Amp. Switches	
No.	Price	No.	Price	No.	Price	No.	Price
8	\$1.90	223	\$2.40	1014	\$6.10	2330	\$8.50
12	1.00	224	3.00	1202	3.95	2334	9.20
15	1.25	238	3.75	1203	4.25	2441	6.55
17	3.30	241	5.05	1212	4.25	2461	6.55
21	3.30	242	4.70	1223	4.75	2462	6.20
25	2.20	243	5.05	1250	3.65	2463	6.55
25T	3.10	244	4.70	1322	4.15	2464	6.20
26	2.65	271	4.00	1323	4.75	2534	6.75
27	2.50	272	4.00	1401	4.10	2632	3.25
30	1.55	273	4.70	1402	3.95	2633	4.65
31T	2.75	274	4.40	1403	4.25	2639	4.65
33	1.65	284	4.80	1401T	4.60	3032	11.15
33T	2.90	292	4.00	1402T	4.55	3033	12.00
38	2.50	294	5.35	1403T	4.80	3532	9.10
39	3.75	322	6.20	1411	4.50	3533	10.00
99	.10	331	4.85	1411T	5.15	3534	13.30
100	.10	332	6.55	1412	4.25	3539	10.00
101	.50	340	4.75	1412T	5.20	3632	16.80
131	3.90	341	5.05	1423	4.75	3633	21.15
132	3.30	330	3.20	1423T	5.45	3634	22.00
133	3.90	362	4.15	1450	3.65	3639	21.10
141	4.15	370	4.15	1450T	4.25	8531	8.90
142	3.75	372	4.95	1451	3.95	8532	8.45
143	4.15	380	4.65	1451T	4.60	8533	9.75
144	4.55	382	4.70	1612	4.05	8534	12.40
145	4.95	392	5.05	1632	9.85	8539	9.75
151	3.40	440	6.20	1643	4.25	9531	15.40
152	3.00	441	6.55	2202	4.80	9532	12.70
153	3.40	443	6.55	2203	4.80	9533	15.40
154	4.45	461	6.55	2230	9.75	9534	17.75
211	4.15	462	6.20	2212	5.10	9539	15.40
212	3.75	463	6.55	2223	5.10	9862	8.45
213	4.15	464	6.20	2234	11.25	9863	8.90
214	3.75	633	5.35	2251	4.50	9864	13.90
221	2.65	734	11.15	2284	6.20		
222	3.00	1013	4.20	2294	6.55		

Wadsworth

60 Amp. Switches		100 Amp. Switches		200 Amp. Switches	
No.	Price	Number	Price	Number	Price
161	\$ 9.60	102	\$15.70	522	\$19.80
162	9.15	110	16.55	523	24.95
163	11.80	111	16.55	722	37.05
171	9.35	112	15.70	723	51.90
172	9.15	113	18.95	724	57.35
503	11.45	513	17.25	729	52.00
1024	18.30	1033	11.55	1042	14.20
1762	16.30	1034	16.50	1043	22.00
1763	22.75	1712	27.35	1044	31.35
1764	21.45	1713	35.40	2622	18.15
1766	21.70	1714	35.00	2623	21.45
1800	15.70	1719	30.90	2624	40.85
1802	16.55	1900	24.35	2629	19.80
1803	17.40	1902	25.20	2812	11.55
1812	17.40	1903	26.10	2813	14.65
1830	19.10	1912	26.10	2819	13.90
1834	20.90	1930	28.70	3212	10.20
1842	17.42	1934	30.50	3213	11.55
1843	18.25	1942	26.10	3522	27.20
1851	16.55	1943	27.90	3523	31.15
2030	18.65	1951	26.10	3524	43.15
2034	17.40	2130	25.20	3529	31.15
2042	15.70	2134	26.95	3622	41.60
2043	16.55	2142	24.40	3623	47.35
2051	14.80	2143	26.10	3624	53.20
2064	13.30	2151	24.40	3629	47.35
2861	8.45	2614	25.60	4603	54.45
2862	8.00	3512	14.65	4643	50.40
2863	9.30	3513	17.75	4630	50.75
2869	9.30	3514	25.60	4634	64.70
3162	15.95	3519	17.75	400 Amp. Switches	
3163	17.75	3612	24.85	642	\$55.45
3262	8.00	3613	31.95	643	67.65
3263	8.45	3614	36.90	742	61.65
3562	9.75	3619	31.95	743	75.13
3563	11.55	8511	14.65	744	91.30
3564	13.75	8512	12.45	749	75.15
3569	11.55	8513	15.55	1052	36.30
3662	17.05	8514	27.50	1053	47.85
3663	22.05	8519	15.55	1054	66.00
3664	24.00	9511	29.30	2542	49.50
3669	22.05	9512	24.85	2543	61.00
8561	9.30	9513	29.30	2544	86.65
8562	8.90	9514	39.00	3512	54.45
8563	10.20	9519	29.30	3543	78.40
8564	14.20	9812	10.65	3544	94.05
8569	10.20	9813	12.00	3549	78.35
9561	18.55	9814	21.45	4803	99.00
9562	14.65			4830	129.35
9563	18.55			4834	137.55
9564	23.25				

EXTRA END WALLS—SHUTTERS—TRIMS—ETC.

Wadsworth

Wadsworth							Knock- out & Shutter	Meter ter	
For	30 Amp.	125 Volt	Switches	Type of Trim	Flat	Extended	Shutter	\$.30	\$.17
" 30 "	250	"	2 Pole		.50	.65	.60	.35	
" 60 "	250	"	3 "		.65	.83	.65	.45	.25
" 60 "	250	"	3 "		.75	.90	.75	.50	...
" 100 "	250	"	2 "		.82	1.00	.82	.45	...
" 100 "	250	"	3 "		.90	1.10	.90	.50	...
" 200 "	250	"	2 "		1.00	1.15	1.00	.50	...
" 200 "	250	"	3 "		1.10	1.25	1.10	.55	...

Murray Switches

ENTRANCE SWITCHES

With End Wall Amps.	Volts	Description	2 Pole		3 Pole	
			No.	Price	No.	Price
30	125	For Plug Fuses 1 Blade 1 Fuse	630	\$ 1.50	230	...
30	125	" " " 2 " 2 "	231	1.65	831	\$2.25
30	125-250	" " "	...	...	831	2.10
30	125-250	For 2 Cartridge Fuses	830	3.55	760	17.40
60	250	" 3 Cart. Fuses-3 Phase-3 Wire	760	20.00	760	...
60	250	" 3 " " 4 " 4 "	760	...	710	29.05
100	250	" 3 " " 3 " 3 "	710	...	712	29.95
100	250	" 3 " " 3 " 4 "	712	...	720	60.75
200	250	" 3 " " 3 " 3 "	720	...	722	68.85
200	250	" 3 " " 3 " 4 "	722	...	...	...

ACCESSIBLE MAIN FUSE SWITCHES

ACCESSIONAL METER FUSE CIRCUITS				Without End Walls	
Meter Test Type		Description		2 Pole	3 Pole
Amps	Volts	No.	Price	No.	Price
30	125	For Plug Fuses One Fuse	755	\$ 3.65	...
30	125	" " 2 & 3 Fuse	748	3.95	756 \$ 4.45
30	250	" Cart. " One Fuse	738	4.20	...
30	250	" " Two Fuse	737	4.85	742 * 4.85
60	250	" " For 1 Fuse	786	15.95	...
60	250	" " For 2 Fuse	764	16.85	765 17.70
100	250	" " For 2 Fuse	718	25.60	719 27.40
Meter Test	3 Phase	3 & 4 Wire Type		Without End Walls	
60	250	For 3 Cart. Fuses-3 Phase-3 Wire	...	767	\$19.90
60	250	" 3 " " 3 " 4 "	...	768	23.00
100	250	" 3 " " 3 " 3 "	...	711	30.00
100	250	" 3 " " 3 " 4 "	...	714	32.45
200	250	" 3 " " 3 " 3 "	...	721	64.80
200	250	" 3 " " 3 " 4 "	...	723	72.90

With Branches Combined

30	125	For Plug Fuses-2 Branches	780	\$5.70	782	\$6.50
30	125	" " " 4 "	781	6.35	783	7.15
30	125	" " " 1 "	784	6.00	...	
30	125	" " " 2 "	785	6.65	...	
Not Meter Test				Without End Wall		
30	125	For Plug Fuses-One Fuse	754	\$ 3.35	755	\$ 3.95
30	125	" " " Two Fuses	752	3.65	753	\$ 3.95
30	250	For Cart.	757	4.55	758	4.55
60	250	" " " " "	762	15.95	763	16.80
100	250	" " " " "	716	24.75	717	25.60

"UNISAFTI"
(Universal Standardized Switches)

All 30 Amps.						
Number	Pole	Fuse	Neutral	Branches & Fusing		Price
234	2	Single		1-2-Wire	2 Fuses	\$3.25
235B	2	"		2-2 "	2 "	3.25
236	2	"		4-2 "	2 "	4.30
237	3	Two	Solid	1-3 "	2 "	3.75
237	2	"		1-2 "	2 "	3.75
237	2	"	Solid	2-2 "	2 "	3.75
238	2	"	Solid	4-2 "	4 "	4.80
238	2	"		2-2 "	4 "	4.80

METER SERVICE SWITCHES

Fuses & Blades Dead		Sealed Fuses		Without End Walls			
Amp.	Volts	Description	No.	2 Pole	Price	No.	Price
30	125	For Plug Fuses	232	\$ 2.20		233	\$ 3.35
60	250	For Cart. Fuses	364	15.05		365	15.95
Fuses Alive							
30	125	For Plug Fuses	330-1	\$ 2.65		333	\$ 3.35
30	250	For Cart. Fuses	130	2.65		133	3.35
60	250	" "	360	8.45		361-3	8.90

310 15.0

TABLE MAIN E

	Polyphase—3 Wire			Without End Walls		
	30 Amp.	60 Amp.	100 Amp.			
3 Pole-3 Blades-For Cart. Fuses 250V.	332 \$11.10	362	\$16.80	311	\$26.50	

TYPE C SWITCHES

TYPE C SWITCHES

Quick Break

Quick Break

Amps.	All Cart. Fuse	2 Pole		3 Pole		4 Pole		
		No.	Price	No.	Price	No.	Price	
30	Solid Neutral	125-250	632	\$ 3.35	633	\$ 4.40	634	\$ 8.70
30	"	"	636	4.95	637	5.45	638	10.15
60	Solid Neutral	125-250	661	8.35	663	9.45	664	12.15
60	"	"	665	9.45	666	10.15	667	12.15
60	Solid Neutral	125-250	662	9.45	663	9.45	664	9.45
100	"	"	611	13.30	613	16.20	614	24.75
100	Solid Neutral	125-250	615	16.20	616	16.20	617	24.75
100	"	"	612	16.20	613B	17.10	614	24.75
200	"	"	621	23.40	623	28.80	624	51.30
200	Solid Neutral	125-250	625	24.30	626	28.80	627	51.30
200	"	"	629	28.80	630B	30.15	631	51.30

END WALLS, PLATES & TROUGHES & ADAPTORS

	30	60	100
	Amp.	Amp.	Amp.
End Wall.	\$.30	\$.65	\$ 1.00
Shutter.	.15	.25	.25
Closure Plate.	.30	.30	.30
Trough Cover & Adapting Slide.	.15	.15	.15
Trough 2" 3" & 4".			\$.40
" 5"			.4
" 6"			.5
" 7"			.5
" 8"			.6
" 9"			.6
" 10"			.7

Switches

Diamond E Switches

SMALL ENTRANCE SWITCHES, 30 AMPS.

Volts	For Fuses	Description	2 Pole	3 Pole
125	Plug	All Fused	P-2	\$1.65
125	Plug	Ground Neutral	P-2S	1.65
250	Cartridge	All Fused	C-2	2.25
250	Cartridge	Ground Neutral	....	....
			C-3S	4.00
			C-3S	2.90

ALL-N-ONE SWITCHES

Live Front	Double Fuse	Dead Front	Single Fuse		
No.	Circuits	Price	No.	Circuits	Price
A-2	2	\$3.45	AD-3	3	\$5.40
A-3	3	3.80	AD-4	4	5.85
A-5	5	4.15	AD-5	5	6.75
A-7	7	6.00	AD-6	6	7.95
A-9	9	6.95	AD-8	8	9.30
			AD-10	10	11.25

RANGE & WATER HEATER SWITCHES

60 Amp.—125 Volts

No. 501	No. 502	No. 503	No. 504	No. 505	No. 506	No. 507
\$9.90	\$15.25	\$23.60	\$26.75	\$20.25	\$8.90	\$13.90

MOTOR STARTING SWITCHES

MS-1 30 Amp. 3 Pole 220 Volts Quick Make & Break Toggle.....	\$6.00
C-3P 30 Amp. 3 Pole 250 Volts Not Toggle.....	7.10

SAFE LINE SERVICE SWITCHES

No. 904 Single Pole 4 Circuits with Transformer.....	\$7.85
" " " without Transformer.....	6.60

INDUSTRIAL TYPE

Quick Break—Single Throw—Fused Bottom

250 Volts					
Amp.	No.	Price	No.	Price	No.
30	3022	\$ 5.40	3032	\$ 6.75	3042
60	6022	8.10	6032	9.00	6042
100	10022	11.65	10032	13.30	10042
200	20022	18.25	20032	24.10	20042
400	40022	44.85	40032	61.50	40042
600	60022	78.00	60032	91.30	60042
500 Volts					
30	3025	\$ 9.00	3035	\$ 8.55	3045
60	6025	9.90	6035	10.80	6045
100	10025	13.30	10035	15.80	10045
200	20025	26.60	20035	30.00	20045
400	40025	68.00	40035	74.70	40045
600	60025	96.30	60035	103.00	60045
600 Volts					
Amps.....	30 Amp.	60 Amp.	100 Amp.	200 Amp.	
Number.....	3026	6026	10026	20026	
Price.....	\$15.30	\$15.80	\$25.00	\$38.60	

Not Fused—Quick Break

Single Throw—No Fuse			Double Throw—No Fuse		
Amps.	Pole	Volts	Number	Price	Number
30	2	250 DC	3022N	\$ 5.00	3022DN
30	3	250 DC	3032N	6.30	3032DN
30	2	500 AC	3025N	8.65	3025DN
30	3	500 AC	3035N	8.10	3035DN
60	2	250-500	6025N	8.10	6025DN
60	3	250-500	6035N	8.55	6035DN
100	2	250-500	10025N	11.50	10025DN
100	3	250-500	10035N	11.25	10035DN
200	2	250-500	20025N	17.00	20025DN
200	3	250-500	20035N	20.75	20035DN
400	2	250-500	40025N	49.80	40025DN
400	3	250-500	40035N	58.00	40035DN
600	2	250-500	60025N	83.00	60025DN
600	3	250-500	60035N	99.60	60035DN

S-SUNDRIES

STEEL WOOD SCREWS

Flat Head

Length	Number	Up To 4	Price	Per Dozen	Per Dozen
1"	" "	.05	\$.05	\$.05	\$.05
1 1/2"	" "	.05	.05	.05	.05
2"	" "	.05	.05	.05	.05
2 1/2"	" "	.05	.05	.05	.05
3"	" "	.05	.05	.05	.05
3 1/2"	" "	.05	.05	.05	.05
4"	" "	.05	.05	.05	.05
1 1/2"	" "	.05	.05	.05	.05
2"	" "	.05	.05	.05	.05
2 1/2"	" "	.05	.05	.05	.05
3"	" "	.05	.05	.05	.05
3 1/2"	" "	.05	.05	.05	.05
4"	" "	.05	.05	.05	.05
1 1/2"	" "	.05	.05	.05	.05
2"	" "	.05	.05	.05	.05
2 1/2"	" "	.05	.05	.05	.05
3"	" "	.05	.05	.05	.05
3 1/2"	" "	.05	.05	.05	.05
4"	" "	.05	.05	.05	.05

STEEL WOOD SCREWS—Continued

Length	Number	Up to 4	Price	Per Dozen	Per Dozen
1 1/2"	" "	.05	.05	\$.05	\$.05
2"	" "	.05	.05	.05	.05
2 1/2"	" "	.05	.05	.05	.05
3"	" "	.05	.05	.05	.05
3 1/2"	" "	.05	.05	.05	.05
4"	" "	.05	.05	.05	.05
1 1/2"	" "	.06	.06	.06	.06
2"	" "	.06	.06	.06	.06
2 1/2"	" "	.06	.06	.06	.06
3"	" "	.06	.06	.06	.06
3 1/2"	" "	.06	.06	.06	.06
4"	" "	.06	.06	.06	.06
1 1/2"	" "	.07	.07	.07	.07
2"	" "	.07	.07	.07	.07
2 1/2"	" "	.07	.07	.07	.07
3"	" "	.07	.07	.07	.07
3 1/2"	" "	.07	.07	.07	.07
4"	" "	.07	.07	.07	.07
1 1/2"	" "	.08	.08	.08	.08
2"	" "	.08	.08	.08	.08
2 1/2"	" "	.08	.08	.08	.08
3"	" "	.08	.08	.08	.08
3 1/2"	" "	.08	.08	.08	.08
4"	" "	.08	.08	.08	.08
1 1/2"	" "	.09	.09	.09	.09
2"	" "	.09	.09	.09	.09
2 1/2"	" "	.09	.09	.09	.09
3"	" "	.09	.09	.09	.09
3 1/2"	" "	.09	.09	.09	.09
4"	" "	.09	.09	.09	.09
1 1/2"	" "	.10	.10	.10	.10
2"	" "	.10	.10	.10	.10
2 1/2"	" "	.10	.10	.10	.10
3"	" "	.10	.10	.10	.10
3 1/2"	" "	.10	.10	.10	.10
4"	" "	.10	.10	.10	.10
1 1/2"	" "	.11	.11	.11	.11
2"	" "	.11	.11	.11	.11
2 1/2"	" "	.11	.11	.11	.11
3"	" "	.11	.11	.11	.11
3 1/2"	" "	.11	.11	.11	.11
4"	" "	.11	.11	.11	.11

BRASS SCREWS

Round, Flat or Oval Head

Length	Number	Up to 4	Price	Per Dozen	Per Dozen
1"	" "	.06	\$.06	\$.06	\$.06
1 1/2"	" "	.07	.07	.07	.07
2"	" "	.07	.07	.07	.07
2 1/2"	" "	.08	.08	.08	.08
3"	" "	.08	.08	.08	.08
3 1/2"	" "	.08	.08	.08	.08
4"	" "	.08	.08	.08	.08

Length	Number	Up to 4	Price	Per Dozen	Per Dozen
1"	" "	.11	\$.11	\$.11	\$.11
1 1/2"	" "	.12	.12	.12	.12
2"	" "	.14	.14	.14	.14
2 1/2"	" "	.15	.15	.15	.15
3"	" "	.16	.16	.16	.16
3 1/2"	" "	.16	.16	.16	.16
4"	" "	.20	.20	.20	.20
1 1/2"	" "	.25	.25	.25	.25
2"	" "	.30	.30	.30	.30
2 1/2"	" "	.35	.35	.35	.35
3"	" "	.40	.40	.40	.40
3 1/2"	" "	.45	.45	.45	.45
4"	" "	.50	.50	.50	.50

For Gross Lots Multiply dozen price 7 times.

TAPE

FRICTION TAPE

	Friction	Per Pound	Per Half Pound	Per 2 Ounces	Per 1 Ounce	Per Foot
Amazon		\$.65	\$.35	\$.10	\$.05	\$.01
Adhere		.65	.35	.10	.05	.01
Bulldog		.70	.40	.10	.05	.01
Cataract		.55	.30	.10	.05	.01
Commodity		.60	.30	.10	.05	.01
Dutch Brand		.60	.30	.10	.05	.01
Everstick		.60	.30	.10	.05	.01
Eaco		.95	.50	.15	.10	.02
G. E.		.55	.30	.10	.05	.01
Graybar Railway Signal		.90	.45	.15	.10	.02
Grimshaw		2.00	1.00	.25	.15	.03
Holdfast		1.00	.50	.15	.10	.02
Holdtite		.60	.30	.10	.05	.01
I X L		.75	.40	.10	.05	.01
Illinois		.85	.30	.10	.05	.01
Johns Manville Armature		1.75	.90	.30	.10	.02
" " Jomanco		1.00	.55	.15	.10	.02
" " White		1.35	.70	.20	.10	.02
" " No. 3 Now No. 5		.60	.30	.10	.05	.01
" " No. 6 " 40		.55	.30	.10	.05	.01
Jaxon		.60	.30	.10	.05	.01
Leader		.70	.35	.10	.05	.01
Manson		1.30	.65	.30	.10	.02
Magnet		.75	.40	.10	.05	.01
O. K.		.50	.30	.10	.05	.01
P & B.		1.00	.50	.15	.10	.02
Peerless		.60	.30	.10	.05	.01
Service		.90	.45	.15	.10	.02
Stanpat		.55	.30	.10	.05	.01
Sticks		.55	.30	.10	.05	.01
Security		.55	.30	.10	.05	.01
Victor		.55	.30	.10	.05	.01
Vim Grav.		1.10	.60	.15	.10	.02

RUBBER TAPE

	Rubber	\$1.00	\$.50	\$.15	\$.10	\$.04
Alexall	"	1.20	.60	.15	.10	.04
Alpha	"	1.00	.50	.15	.10	.04
Brooklyn	"	.60	.30	.10	.05	.03
Cataract	"	.70	.35	.10	.05	.03
Dutch Brand	"	.70	.35	.10	.05	.03
Eisco	"	.60	.30	.10	.05	.03
G. E.	"	.60	.30	.10	.05	.03
Graybar Victor	"	.60	.30	.10	.05	.03
Holdfast	"	1.00	.50	.15	.10	.04
Imperial	"	.60	.30	.10	.05	.03
Illinois	"	.60	.30	.10	.05	.03
Okonite	"	1.65	.85	.30	.10	.04
Para	"	.75	.40	.10	.05	.03
Pittsburgh	"	.60	.30	.10	.05	.03
Rello U.S.	"	.60	.30	.10	.05	.03
Security	"	.55	.30	.10	.05	.03
U. S. Rubber	"	.65	.35	.10	.05	.03
Twin Tape Rubber & Friction	"	.75	.40	.10	.05	.03
USCO Westinghouse	"	.90	.50	.15	.10	.04

COUCH TELEPHONES

VESTIBULE TYPE

No. 74 Armored Cord Receiver Type	\$25.00
No. 74A Swing Arm Receiver Type	37.30
No. 74C Cordless Loud Speaker Type	30.75
Above prices are for telephones complete but do not include for any call buttons.	
Add for buttons—Janitor Calling Buttons if fitted	.95
Add for Each Suite Calling Button	.95

SUITE TELEPHONES

series 2800 to 2849 or 1900 to 49	Page 22 Bulletin No. 89 S. H. Couch Co.
Number of Buttons	0 1 2 3 4
Price Ea. Surface or Flush	\$11.40 \$11.40 \$12.45 \$13.60 \$14.60

TELEPHONE CABLES

Number of Conductors	Braided Type "B"	Lead Covered Type "L"
8	B-8	\$.14
12	B-12	.15 1/2
16	B-16	.18
21	B-21	.22
25	B-25	.24
31	B-31	.27
37	B-37	.30
		L-8 L-12 L-16 L-21 L-25 L-31 L-37
		.18 .21 .27 .32 .32 .39 .44

TIME SWITCHES

BUCKEYE TIME SWITCHES Without Term. Box.

110 or 220 V.-Sgl or Dble Pole-10 A.	\$19.50	\$28.00
" " " " " " 20 A.	23.00	30.00
" " " " " " 30 A.	26.00	32.00
" " " " " " 50 A.	30.00	36.00
Specials.	26.00	30.00

Buckeye Combination Time Switch Remote Control Unit Complete
AC Capacity up to 125A-110 or 220 Volt-2 & 3 Wires \$ 70.00
DC 125.00

HARTFORD TIME SWITCHES

	10 Amp.	20 Amp.	35 Amp.	50 Amp.
Type B Single or Double Pole	\$36.00	\$39.00	\$42.00	\$50.00
Type B Triple Pole	38.00	41.00	45.00	
Type C & D Single or Double Pole	39.00	42.00	47.00	52.00
Type C & D Triple Pole	41.00	45.00	49.00	
Type G Apt. Hall Light Control D.P.	38.00	.....	60.00	.....

PARAGON TIME SWITCHES

Indoor	All 250 Volts	Outdoor
No. 1-\$47.00	30 Amp. Double Pole	No. 2-\$47.00
No. 1-\$59.00	50 "	No. 2-\$59.00
No. 1-\$59.00	30 " Triple	No. 2-\$59.00
No. 3-\$45.00	20 " Double	No. 4-\$45.00
No. 3-\$40.00	10 " "	No. 4-\$40.00
No. 3-\$45.00	10 " Triple	No. 4-\$45.00
Sunday Shut Off—Extra		\$5.00
Attachment for Turning on earlier		5.00

RELIANCE & RACINE SWITCHES

Racine Type 1R-2R	10 Amp.	20 Amp.	30 Amp.	50 Amp.
Reliance Type 10-20-30-50	28.00	30.00	\$32.00	\$36.00
Reliance Type 15 Triple Pole	.....	32.00	.....	.....

SAUTER TIME SWITCHES

All 115-230 Volt A. C. & D. C. Single Throw.	Description	Price
101 2 1	Clock operated, key wound	\$52.00
111 10 1	" " " 40 " " 40 day clocks	56.00
121 15 2	" " " 40 " " 40	60.00
201 2 1	Self winding	74.00
211 10 1	" " "	80.00
221 10 2	" " "	85.00
321 25 2	Motor operated self winding clocks	105.00
341 40 2	" " "	110.00
401 100 2	Motor operated Oil Break self winding clocks	190.00
431 200 2	" " "	250.00
461 300 2	" " "	280.00

TORK TIME SWITCHES OR CLOCKS

Single Pole 15 Amp. 125 Volt	Indoor	Outdoor	Switchboard
Double " 20 " 250 "	\$115—\$20.00	\$215—\$25.00	#1015—\$19.00
Single " Double Throw	\$130—	25.00	#230—30.00
Double " Momentary Contact	\$111—	25.00	.....
Dble. Pole 30 A. 250 V. Windless	\$730—60.00	\$830—65.00	#330—58.00

Combination Type—with Clock and Contactor

For AC Only	Description	For DC Only
No. 76062 \$50.00	60 Amp. 2 Pole	No. 75062 \$70.00
No. 76102 75.00	100 " 2 Pole	No. 75102 125.00

ZENITH TIME SWITCHES

Amp. Volts Pole	Closed T-810	Face \$20.00	Open Face	Open Flush	Mount
10 110 Sgl.	110-230 Volt	.....	.....	.....	.....
10 220 Sgl.	110-230 Volt	.....	.....	.....	.....
10 220 Dbl.	110-230 Volt	.....	.....	.....	.....
10 220 Dbl. On-Off	110-230 Volt	.....	.....	.....	.....
20 110 Sgl.	110-230 Volt	.....	.....	.....	.....
20 220 Dbl.	110-230 Volt	.....	.....	.....	.....
20 220 Dbl. 110-230 Volt	110-230 Volt	.....	.....	.....	.....
20 220 Tri.	110-230 Volt	.....	.....	.....	.....
30 220 Dbl.	110-230 Volt	.....	.....	.....	.....

TRANSFORMERS

BELL & TOY TRANSFORMERS

Name	Style	Watt	Volts	Secondary	50 to 133 Cycle
Steel Clad Bell	25	Single	86	1.30	\$6 \$1.50
" " "	25	Three	86T	1.60	86T 1.80
Porcelain Bell	2				

WIRES

RUBBER COVERED WIRES

Special Price on No. 14 S.B. Wire

		Per Foot
In less than Coil Lots.		.0135
In Coil Lots.		.01

Other Sizes	No. 18	No. 16	No. 14	Price Per Foot
Fixture Wire Light.	.01	.0135		
" Heavy.	.0135	.0135		

Solid Single Braid.	.0135	.0135	See Above
" Double "	.0135	.0135	.02

Stranded Sgle. Braid.	.0135	.0135	.02
" Dble. "			.0235

Duplex Single Braid.			.04
" Double "			.05

Other Sizes	No. 12	No. 10	No. 8	No. 6	Price Per Foot
Fixture Wire Light.					
" Heavy.					

Solid Single Braid.	.02	.03	.04	.07	Price
" Double "	.0235	.034	.05	.0735	

Stranded Sgle. Braid.	.035	.035	.05	.07
" Dble. "	.03	.04	.0535	.0735

Duplex Single Braid.	.05	.06	.085	.13	Price
" Double "	.06	.0735	.0935	.1335	

LARGER SIZES DOUBLE BRAID STRANDED

Size	Per Foot	Size	Per Foot
No. 8 D. B.	.0354	No. 1 D. B.	.19
No. 6 D. B.	.075	No. 0.	.235
No. 4 D. B.	.10	No. 00.	.27
No. 3 D. B.	.12	No. 000.	.33
No. 2 D. B.	.135	No. 0000.	.40

CIRCULAR MILL CABLE

Size	Per Foot	Size	Per Foot	Size	Per Foot
250,000 C. M.	.48	600,000 C. M.	\$1.00		
300,000 C. M.	.57	700,000 C. M.	1.26		
350,000 C. M.	.65	750,000 C. M.	1.34		
400,000 C. M.	.73	800,000 C. M.	1.44		
450,000 C. M.	.83	900,000 C. M.	1.60		
500,000 C. M.	.90	1,000,000 C. M.	1.75		

Additions to Code Wire for 25% (Intermediate Grade) and 30% Wire.

Sizes	or 25% Wire	For Intermediate	For 30% Wire
From No. 14 to No. 1.	5%	.....	10%
From No. 1/0 to 4.	3%	.....	6%
From 250,000 to 400,000 CM.	2%	.....	5%
From 500,000 to 1,000,000 CM.	1 1/2%	.....	3%

WEATHERPROOF WIRE

Triple Braid

	Price	No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Per Pound Solid.	\$.64	\$.60	\$.58	\$.56	\$.51	\$.48	\$.46	
" Stranded.					.59	.53	.50	
Per Foot Solid.	.01	.0135	.013	.0235	.03	.04		
" " Stranded.	.0135	.0135	.0235	.03	.0335	.0435		
Number Feet Per Pound.	90	70	40	30	20	13		

EXTRAS—For slow burning W. P. Wire—Per Pound Extra.		\$.01
For Twisted Pair W. P. Wire—Per Pound Extra.		.02
For Double Braid W. P. Wire—Per Pound Extra.		.01
For Medium Hard Drawn—Per Pound Extra.		.0035

For Armored Cables See Page PL-9.

ANNUNCIATOR—TELEPHONE WIRE, ETC.

Fixture	Solid	Description	No. 18	No. 16	No. 14
Wire	Light	1/4 Per Foot.	.01	.0135	
	Heavy	1/2 "	.0135	.0135	
	Stranded	Light	.0135	.0135	

Annunciator Wire	No. 18	No. 16	No. 14	No. 12
Single	.70	.68	.65	
Twisted or Duplex	.75	.70	.68	
Per Foot.	.01	.0135	.0135	

Office & Damp Proof Wire	No. 18	No. 16	No. 14	No. 12
Single	.90	.85	.80	
"	.01	.0135	.02	
Twisted or Duplex	.92	.88	.83	
Per Foot.	.02	.03	.04	

" Deltabeston" or similar	No. 18	No. 16	No. 14	No. 12
Single Stranded Black Per Foot.	.03	.035	.04	.05
Single Stranded Colored Per Foot.	.04	.04	.05	.06
Single Glazed Cotton Per Foot.	.04	.04	.05	.07

Asbestos Range Wire	No. 18	No. 16	No. 14	No. 12
Asbestos Range Wire or Switch Board Wire	\$.10	\$.12	.13	.15

COVERED TELEPHONE WIRES

No. 22-1/2	Twin Pair Plain Pothead Copper Wire.	Per Foot
No. 22-1/2	Twin Pair Flame Proof Copper Wire.	.04
No. 22-B & S	Twin Pair West. Elect. Flameproof Jumper Wire (Enam)	.06
No. 19-.085	Twin Pair Flame Proof Copper Wire.	.04
No. 19-1/2	Twin Pair Dry Braid Interior Copper Wire (Olive).	.035
No. 19-1/2	3 Conductor Ditto.	.05
No. 18-1/2	Twin Pair, Bridlewire, Saturated Braid.	.035
No. 14-1/2	Twin Pair Outside of Bridle Saturated Braid.	.06

Note—For Prices of Sgle. Conductor use 1/2 of above prices per foot.

GALVANIZED TELEPHONE WIRE

Size BWG	No. 4	No. 6	No. 8	No. 10	No. 12	No. 14
EBB Extra Best	Per Pound...	\$.13	\$.13	\$.13	\$.14	\$.15
B. B. Best Best	" "	.12	.12	.12	.13	.14
Steel	" "	.11	.11	.11	.12	.13
Weight Per 1000 Feet.		153	112	74	49	32
Weight Per Mile.		811	590	390	258	170

WIRE, MAGNET
Price Per Pound

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Plain Enamel	Enamel- ed Single	Enamel- ed Double
8	\$.95	\$1.00			\$.95	\$1.00	\$1.05
10	.98	1.02			.97	1.04	1.07
12	1.00	1.05			1.03	1.06	1.09
14	1.05	1.10			1.02	1.08	1.12
16	1.07	1.12	\$ 1.45	\$ 1.60	1.05	1.10	1.20
18	1.09	1.15	1.50	1.80	1.08	1.15	1.30
20	1.15	1.25	1.70	2.05	1.10	1.30	1.45
22	1.25	1.35	1.80	2.20	1.12	1.35	1.45
24	1.35	1.45	1.90	2.40	1.15	1.45	1.60
26	1.45	1.55	2.00	2.60	1.20	1.50	1.70
28	1.55	1.65	2.10	2.80	1.25	1.55	1.80
30	1.65	1.75	2.20	3.00	1.30	1.60	1.85
32	1.75	1.85	2.30	3.20	1.35	1.65	1.90
34	1.85	1.95	2.40	3.40	1.40	1.70	1.95
36	1.95	2.05	2.50				

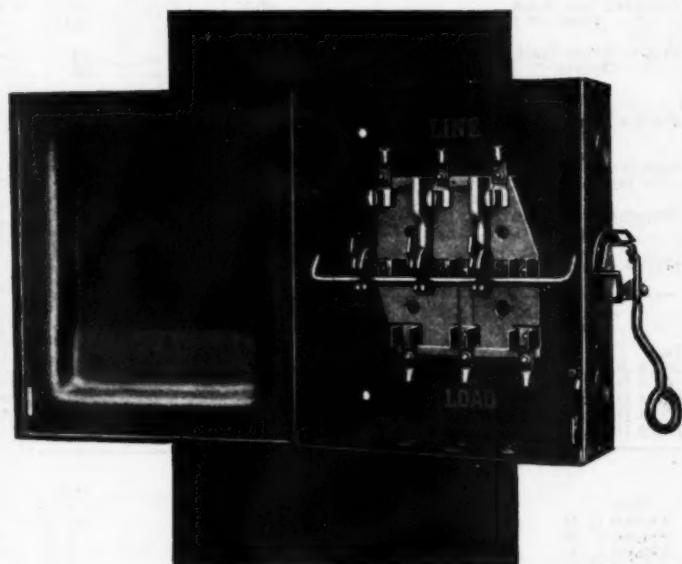
A better job, bigger profit —but no more labor

WHEN you use the Cutler-Hammer Standard Duty (Type C) Switch, you can ask more profit because it makes for a better job—at no greater expense to you.

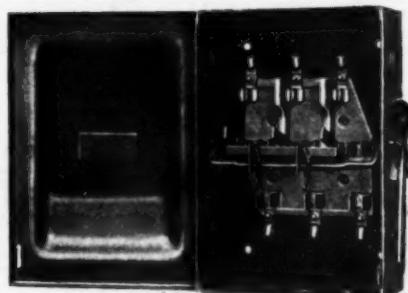
Among the features which insure this greater value to the customer, this greater satisfaction and longer life, are quick *make* as well as quick break. Quick *make* assures perfect contact under all circumstances. Inexperienced operators cannot fail to close the switch. Slow burning of contacts due to arcing is eliminated.

Also, C-H Standard Duty Switch has a molded crack-proof base, is heavily insulated and carefully constructed throughout. Despite the fact that it is smaller than ordinary, it is exceptionally convenient to wire. It is made in 6 sizes, from 30 to 400 amperes at 250 and 600 volts ... carried by reliable jobbers. A complete catalog describing this and other C-H "T-V" Switches for every service will be sent upon request.

CUTLER-HAMMER, Inc.
Trumbull-Vanderpoel Elec. Mfg. Co., Inc.
Subsidiary
1307 St. Paul Avenue
MILWAUKEE, WIS.



C-H Standard Duty Switch
(Type C)



C-H Entrance Switch

C-H quality in an entrance switch. This C-H Switch has the same general design and construction as the C-H Type C—including molded, crack-proof base. Quick break only but a high quality switch at little cost. Twenty-one sizes from 30 to 100 amps. at 125 and 250 volts—and either solid neutral, 2 or 3 wire.

CUTLER HAMMER

High Quality Safety Switches For Every Service

(9026)

League" by G. W. Weston of Kansas City, Mo.

The trophy for the prize winning paper in a competition arranged for secretary-managers of leagues on the subject "How my League Discharges its Obligations to the Local Electrical Industry" was won by E. C. Banks, manager Red Seal Electric Service, Manitoba Electric Association, Winnipeg. Papers receiving honorable mention were submitted by J. S. Bartlett, Milwaukee; G. B. Noll, Erie and S. S. Vineberg of Buffalo.

* * *

Long Island Contractors' First Outing

The Long Island Master Electrical Contractors Association with headquarters at 4126—58th St., Woodside, Long Island, N. Y., held its first outing recently at Bellmore, L. I. The affair was a great success and proved well worth the effort expended.

Athletic events were the feature of the day. The honors were quite evenly divided between the

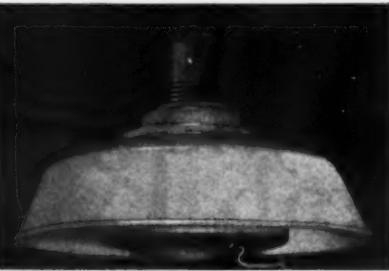


Some of the officers of the Long Island Master Electrical Contractors Association.

Left to right: Benj. Greenwald, chairman, board of governors; Harold Story, secretary-treasurer; H. J. Barth, president; H. L. Zimmerman, member board of governors and toastmaster; and Eugene J. Zoldy, chairman entertainment committee.

Electric Light Co., and the contractors. The contractors defeated the electric company in baseball with a close score of 4 to 3. Each member of the winning team was presented with a \$2.50 gold piece. The light company carried off the field events. The tug of war was won by the inspectors who were each awarded a \$2.50 gold piece.

ABolite "GLASS STEEL" REFLECTORS



are real good-will builders for the Electrical Contractor. They have several valuable features which combine beauty with adaptability and give better illumination.

**Easy to Sell
Easy to Wire**

For office and any industrial lighting problems where some ceiling reflected illumination is necessary. This Glass-Steel unit has become a favorite because its porcelain enameled steel reflector directs the light over a given area and the glass bowl diffuses the light into a soft, clear glow.

Make a practice of selling the best unit there is for each specific lighting problem. The ABolite line of porcelain enameled Reflectors is complete and we want you to have our Catalog No. 180—Send for it today. The Reflector with the strong round beaded edge.

**The ABolite Reflector Co.
2114 Terminal Tower,
Cleveland, Ohio.**



for Electrical Contractors who really KNOW radio

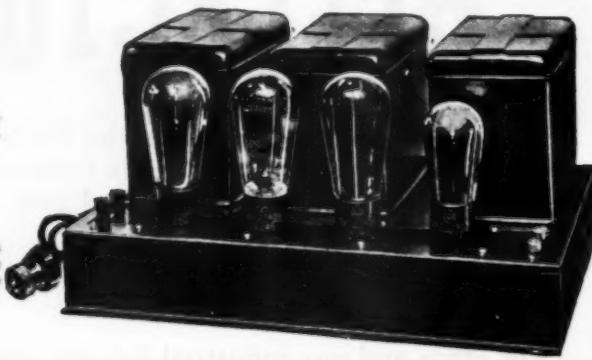
IT is amazing the money that can be made by installing sound systems. The business is everywhere. But you must know how to look for it and how to handle it after you get it in order to profit by the great opportunity of today.

In every territory Broadcasting Systems are required for . . .

Amusement Parks	Dance Halls	Riding Academies
Aviation Fields	Factories	Sanitariums
Band Stands	Gymnasiums	Skating Rinks
Base Ball Parks	Hospitals	Sporting Arenas
Camps	Hotels	Stadiums
Churches	Playgrounds	Steamships
Circuses	Public Parks	Swimming Pools
Civic Centers	Race Tracks	Theaters
Convention Halls	Railroad Depots	Yacht Clubs
	Restaurants	



Powerizer Amplifier Panels for Every Installation Need



Powerizer Amplifiers are in operation two seconds after the switch makes contact

Many alert contractors have allied themselves with POWERIZER, the amplifier of perfect tonal power. With it as the heart of a Sound System, better installations are made and the services of the contractor who made them are sought after.

We want to talk brass tacks with contractors who can see the possibilities in Sound Installations. We are ready to help them and to protect them in their territories. A lifetime of amplifying and control mechanisms bearing our trade mark is at your disposal . . . if you are ALIVE to the opportunity we are offering. Get in touch with us at once.

Literature and Questionnaire on Request

Service Agencies in Important Cities

Radio Receptor Company, Inc.
106 Seventh Ave., New York City

Licensed by Radio Corporation of America
and Associated Companies

POWERIZER

SOUND SYSTEMS

A total of 75 prizes were awarded to winners of the athletic events and holders of lucky numbers.

In the evening at dinner H. Zimmerman acted as toastmaster and in his usual colorful manner, introduced the many prominent speakers.

* * *

Conduit Ordinance for Oklahoma City

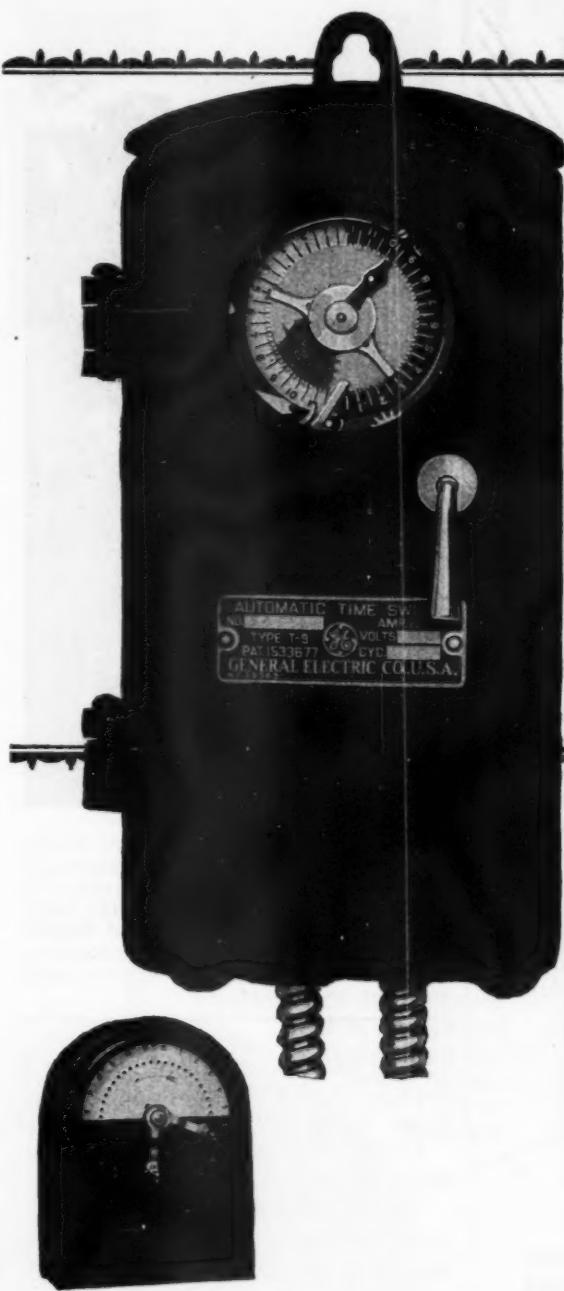
Under the new wiring ordinance for Oklahoma City which was passed in January, and is now available in booklet form, all wiring within the city limits is to be installed in metal conduit or metal moulding, except that wiring in old buildings may be installed in flexible metallic conduit.

Other interesting features of the ordinance are as follows: Receptacles for electric irons are to be on separate circuits and be equipped with pilot lamps. When any receptacle for any purpose is wired and equipped in any kitchen, rear porch, or refrigerator room or breakfast room, or within 10 ft. of a doorway leading into any such room, a receptacle for iron connection is to be installed.

All lighting fixtures in kitchens, and bath rooms are to be keyless and be controlled by wall switches. In clothes closets a



REAL RED SEAL CO-OPERATION:—Ted C. Brown (left), manager of the Indianapolis Electric League, not only dreams Red Seal but gets out and does things for it. With Ted is W. L. Bridges, president of Bridges & Graves, realtors and builders. Mr. Bridges is 100 per cent for Red Seal and his acceptance of the idea is a great help to better wiring in Indianapolis.



*Time-controlled
switches for turning
circuits "on" and
"off" automatically*



A device so advanced in operating principle can not fail to win approval ~

To even the most discriminating buyer of electric devices, G-E motor-operated time switches have a logical appeal.

The motor-operation principle makes possible an outstanding device that is extremely simple and free from operating difficulties. In accuracy, in reliability, and in entirely automatic performance, this G-E product is in a class by itself.

There are two ratings, one suitable for outdoor installation, and contactors are available for handling circuits of higher rating.

Available through G-E distributors. A postal card or letter to your G-E distributor or the nearest G-E office will bring full information.

GENERAL ELECTRIC 621-6
GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

Binds Itself thru the Cable Insu- lation

WILL NOT
CRACK OR
PULL AWAY
IN VERY
COLD
WEATHER,
OR FLOW
TOO FREELY
IN HOT WEATHER



HIGH VOLTAGE INSULATING COMPOUNDS

Composite materials for use on high-voltage lines in cable joints, potheads, terminal bells and transformers . . . and low-voltage compound intended for protection of telephone conductors, instrument parts and small coils. MINERALLAC COMPOUNDS meet every exacting requirement and are approved by the largest public utility companies. High dielectric strength and insulating resistance between conductors and from conductors to ground, displace all moisture, air, gas and eliminate voids—remaining intact without change in volume. Electrical contractors everywhere have adopted Mineralac Insulating Compounds. Order your stock today from your jobber, or write us direct, giving us his name.

Also manufacturers of cable and conduit hangers carrying the approval of the Underwriters' Laboratories. Jiffy Clips for hanging pipe—Conduit and lead covered cable—Altman Desk and Table Pushes, round and rectangular in different styles and finishes.

MINERALLAC ELECTRIC COMPANY

25 No. Peoria St.
CHICAGO, ILLINOIS



WINS TUG-O-WAR:—A. V. Doremus, chief inspector of the Department of Water Supply, Gas & Electricity of Long Island City, snapped at the Bellmore outing of the Long Island Master Electrical Contractors' Association. The inspectors, having a greater pull, won the tug-o'-war.

ceiling fixture controlled by a wall switch or automatic door switch must be used.

Garage circuits from the main building must be separately fused.

All concealed wiring for door bells and other signal circuits shall be rubber covered and braided and not smaller than No. 18.

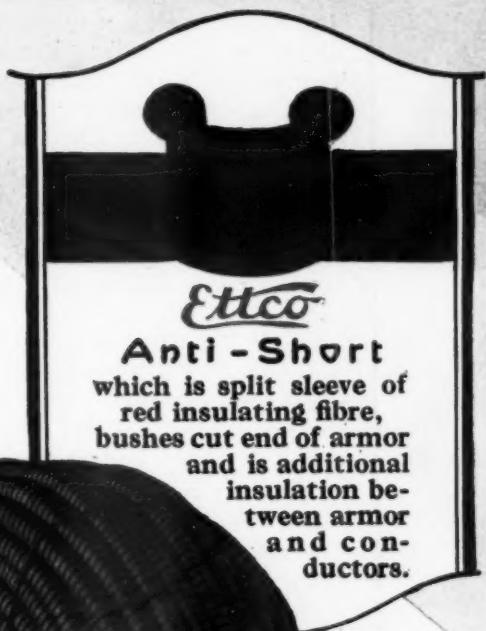
* * *

Improper Wiring Causes Huge Fire Loss

The 1928 loss from fires caused by careless use of electricity and electrical appliances, according to the National Board of Fire Underwriters, was \$15,450,697. Only 4 per cent of the loss due to careless handling of electricity occurred in buildings properly wired according to the National Electrical Code.

Of all fires caused by electricity, 37 per cent result from careless use of the electric flat-iron. Much of the remaining electrical losses result from improper wiring and overloading of circuits.

Announcing The New **Ettco**



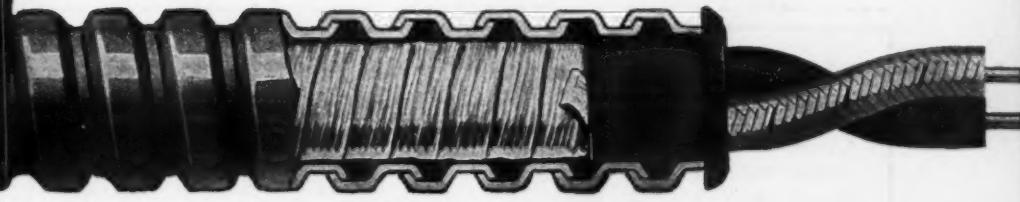
CABLE **Double Armored**

A new "DOUBLE ARMORED" Cable with ANTI-SHORT Bushing—proof against grounds and shorts.

Conductors protected by ironed on KRAFT ARMOR between conductors and steel.

Steel Armor of STRONGEST construction insures maximum grounding continuity full length of Cable.

A.B.C. = Armored Bushed Cable
"Double Armored" Cable
"Anti-Short"



Eastern Tube & Tool Co., Inc.
Brooklyn, N. Y.



Genuine Bakelite Duplex Receptacle SAVES 5 to 10 cents per outlet

Genuine Bakelite Throughout

* * *

Polarized Blade Entrances

* * *

Simple to Install

* * *

Plaster Ears

* * *

Extremely Shallow—
Allowing Maximum Box Space

* * *

Extra Splicing Screws
Eliminating Necessity of Wire
Connectors or Soldering, Twist-
ing and Taping of Wires

* * *

Cost to Contractors \$15.00 per hundred

NEW YORK - UNITED STATES ELECTRIC MANUFACTURING CORP., CHICAGO

Manufacturers of
Usalite Wiring Devices and the Famous Usalite Genuine Bakelite Outlet Plugs



ACT NOW! Mail Coupon Today

United States Electric Mfg. Corp.,
222-28 W. 14th St.,
New York, N. Y.

Please send me at once, without obligation on my part, FREE Sample of the USALITE Genuine Bakelite Duplex Receptacle.

Name.....

Address.....

Jobber..... State.....

To Discuss Cheaper Wiring

The topic of cheaper wiring from the standpoint of necessity and desirability is to be presented to the Northwestern Section of the International Association of Electrical Inspectors at their fourth annual meeting, September 9, 10 and 11, at Vancouver Hotel, Vancouver, B. C., by Major H. S. Bennion, director of engineering of the National Electrical Light Association. The discussion on this paper is to be led by a former member of the Association of Electragists' Executive Committee, C. H. E. Williams of Vancouver.

Other topics of interest on the program are: "Reinspection," by Robert L. Laing, fire marshal of the City of Seattle; "Reasons for Grounding," Dr. M. G. Lloyd, Bureau of Standards; "Armored Cables," A. Penn Denton, N. E. M. A.; "The Dreamer," by William S. Boyd, secretary Western Section, I. A. E. I.; "The Uniform Ordinance," by H. B. Kirkland, Society for Electrical Development.

J. C. Forsyth, president of the International Association, will speak about the activities and progress of the parent association; V. H. Tousley will tell about his work as electrical field engineer, and Dana Pierce, president of Underwriters' Laboratories, will make an address.



WIRING BIG DAYTON JOB:—The partners in the Robbins Electric Co., Indianapolis, Ind., during a little sidewalk conference as one of them starts out to visit an important job. Left to right: Earl Robbins, secretary-treasurer; Elmer J. Murphy, president; and J. W. Nash, estimator and engineer. This company goes out of town for many of their jobs.

When this picture was taken they were working on the Lorretti Guild, a Catholic girls home in Dayton, Ohio.



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UCC

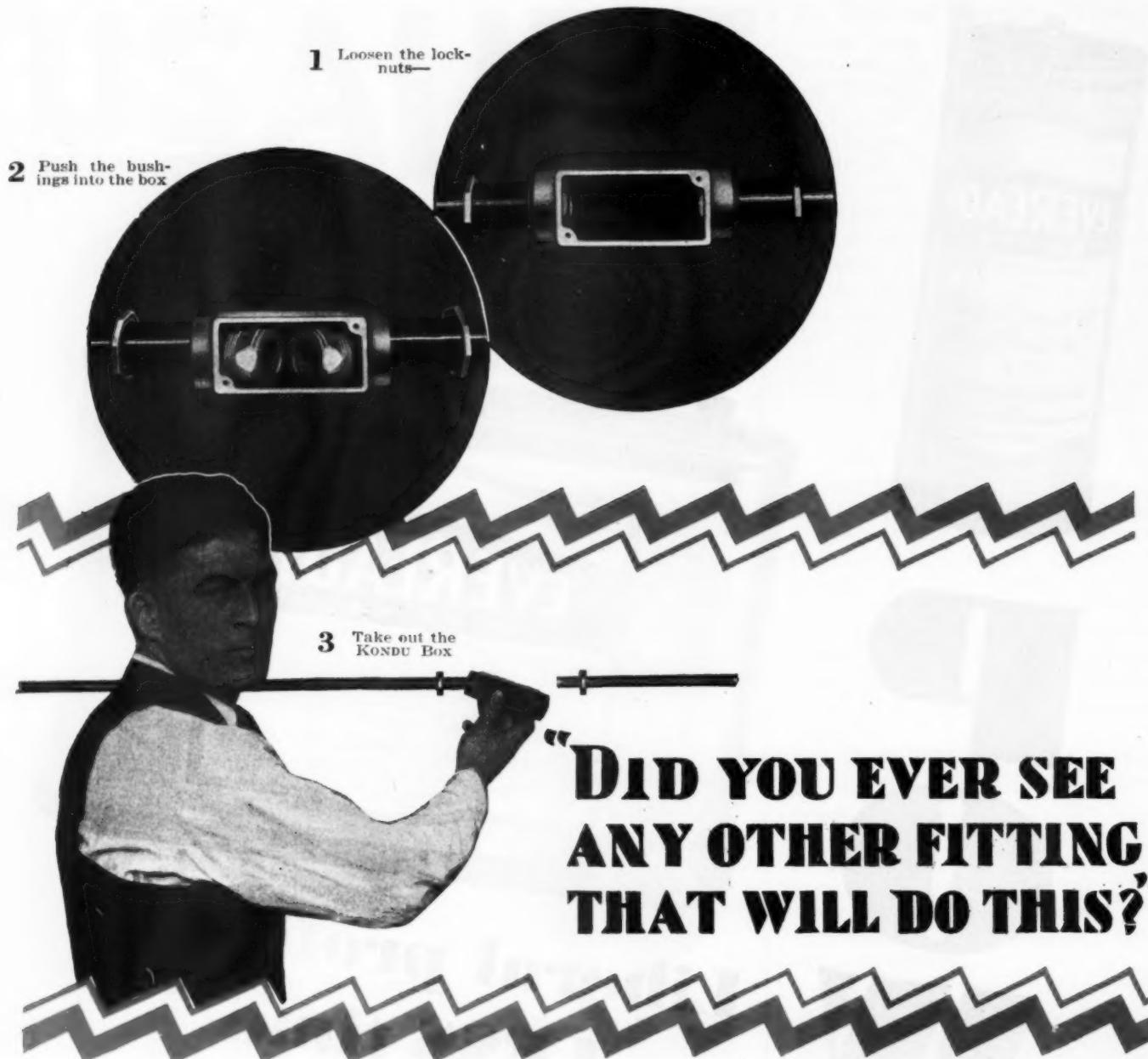
UCC
Unit of Union Carbide
and Carbon Corporation

Liberal profits in LESS time

EVEREADY Dry Batteries take less time to sell. That is a known fact according to reports received from dealers in all parts of the country. Eveready Dry Batteries have been the popular choice with the buying public for over 33 years. National advertising is retaining and increasing public preference.

Eveready Dry Batteries are sold at a price which gives you a liberal profit. Then they give you another profit in time saved in selling them. Stock these fast-selling batteries today. Order from your jobber.

NATIONAL CARBON COMPANY, INC.
General Offices: New York, N. Y.
Branches: Chicago, Kansas City, New York, San Francisco



"Neither did I! KONDU is the only fitting that can be taken out of the line separately, without disturbing any conduit."

When you talk to electrical maintenance men, they tell you that the KONDU Threadless Fitting is *in a class by itself* for saving time on changes in conduit lines — besides the savings made on new conduit installations.

And you can see at once why KONDU takes far less time to install —

The Simplest, Handiest Fitting

(1) Just slide a lock-nut over each end of the

conduit, and slip the KONDU Box over the end. (2) Push the beaded bushings into place. (3) Give the lock-nut three or four turns — and KONDU is in place to *stay put*.

With KONDU, the savings in labor often *pay back the entire cost of the fittings several times over*.

Drop us a line for the KONDU Catalog, showing the complete line of threadless fittings.

ERIE MALLEABLE IRON COMPANY

Kondu Division 510 West 12th Street Erie, Pa.
Canadian Representative
KONDU MANUFACTURING CO., LTD.,
Preston, Ont.

FIRST IN THE FIELD
OF
THREADLESS FITTINGS—

KONDU

CAN BE TAKEN
OUT OF THE LINE
ANYWHERE
AT ANYTIME



SPEED IS THIS COMPANY'S STRONG HOLD:—Besides playing the industrial wiring end extensively, the La France Electric Co., Toledo, O., has all the knowledge and equipment necessary to do a fine job on motor work of all kinds. They can take in a repair job at 5 P.M. and have the machine working again when the whistle starts the next day's activities. Left to right: Albert Eldridge; Tom Craham; Ernst Hochstetter; Lloyd Heit, and F. E. La France, president.

Many Exhibitors for National Exposition

Radically different from any electrical show ever held in this country, the National Electrical Exposition in Grand Central Palace, New York City, October 7 to 12, has already signed ninety manufacturers of electrical equipment and is attracting wide attention from the industrial user and the domestic consumer of electrical current.

Nothing but electrical equipment will be featured. This announcement of policy comes from the Electrical Board of Trade of New York and the New York Electrical League, sponsors of the exposition, and the International Exposition Company, managing directors of the show.

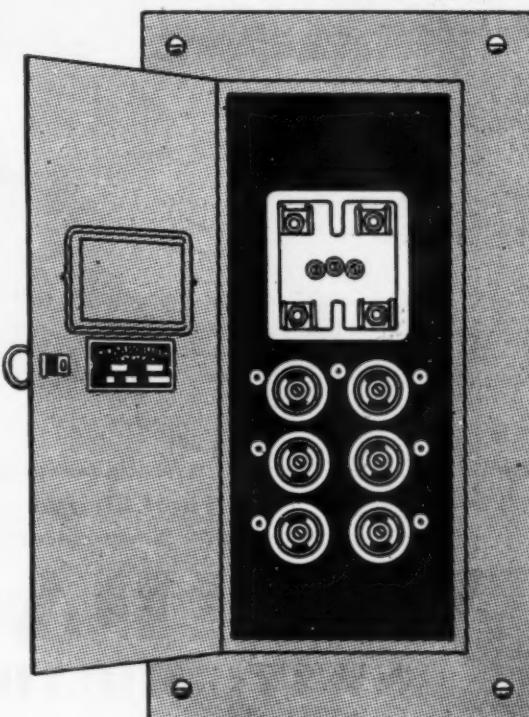
With this viewpoint in mind, it is anticipated by the management to bring together the greatest gathering of electricity-using industries, jobbers, the distributing trade, contractors and the domestic appliance buying public, ever attracted to a show of this kind.

Separate hours will be reserved for industrial and trade visitors and the general public. From 10 in the morning until 2 P. M. ad-

NEW WADSWORTH 60 ampere range *circuit cabinets*

Designed by an experienced electrical inspector and contractor who knows your problems.

With or without plug fuse distribution for flush and surface mounting dead front construction.

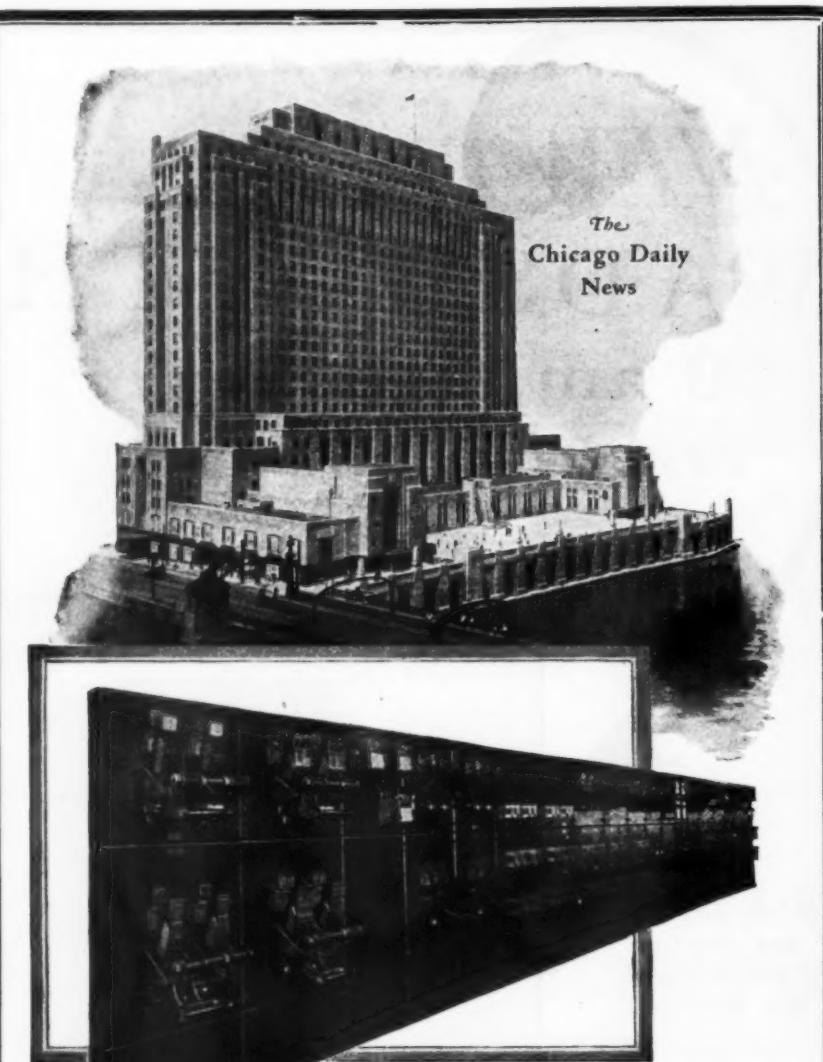


CATALOG NO. 66F
With Aluminized Trim

Wadsworth Range Circuit Cabinets have all the distinctive Wadsworth quality features. Cabinets are equipped with Easily Removable Dead Front and have ample wiring space. Cabinets have two Bar Hanger Supports with tapped holes to take screws thru angle piece on Cabinet—this method provides maximum working space at top and bottom of Cabinet and simplifies mounting. The Trim has a durable Baked Aluminum Finish.

Demand them and your Jobber will supply you.

The WADSWORTH ELECTRIC MFG. CO. INC.
Covington, Kentucky



*The Chicago
Daily News Selects*

WURDACK SWITCHBOARDS

No service is more exacting in its demands upon the stamina and performance of a switchboard than that of a newspaper. The heavy loads, varying demands and 24-hour duty, characteristic of newspaper plant service, demands switchboard equipment of unlimited stamina, ample capacity, correct design and sturdy, honest construction.

It is significant then, that the three largest evening newspapers in the Central West, the Kansas City Star, the St. Louis Post-Dispatch and the Chicago Daily News, whose recently completed plant is illustrated above, all selected Wurdack products for their current control equipment.

WM WURDACK
ELECTRIC MFG. CO.

4444 CLAYTON AVE., ST. LOUIS, MO.

mission will be restricted exclusively to the trade, to industrial and commercial users.

* * *

New Flexible Cord Standard

Underwriters' Laboratories has printed a standard for heat-resisting fixture wire and flexible cord, i. e., those cords having asbestos or other fibrous insulation. Rubber covered cords are dealt with in another standard.

The two products covered in the new specifications are of practically the same construction, fixture wire differing from flexible cord only in that the former is a single conductor product while the latter is of multiple conductor type.

Under the new 1929 Code which will be available shortly, heat-resisting flexible cord can be used only in dry places and even then only for pendant applications.

* * *

To Set Up Cord Set Standards

A special industry conference to consider the formulation of standards for better cord sets as well as plugs and flatiron cords



LARGE INDUSTRIAL HIS SPECIALTY:—R. H. Winters & Son, Toledo, O., is especially well equipped for major industrial and commercial installations. The head of the company is seen here with his bulldog, Lady, who doesn't care whether wire goes up or down.

Wagner Farm-Handi Motors

To facilitate the general use of Wagner Motors on the farm, a portable mounting has been devised . . . just another evidence of Wagner desire to build motors that meet all service requirements. The importance of applying the right motor to the job is the reason why Wagner builds every commercial type of alternating-current motor.



Whatever you require . . . Wagner can recommend without prejudice the right motor for a job.

Literature on Request

WAGNER ELECTRIC CORPORATION
6400 Plymouth Avenue, St. Louis, U. S. A.

Wagner Sales Offices & Service Stations in 25 Principal Cities

Products: FANS Desk, Wall and Ceiling
TRANSFORMERS . . . Power, Distribution and Instrument
MOTORS . . . Single-phase, Polyphase and Direct Current



Wagner
... quality

61-7631-1

Final Inspection

*then--the stamp
of approval*



Approved
by the
Underwriters'
Laboratories

Although "GALVADUCT" is closely inspected after each operation as it gradually takes its finished form—a final inspection must be passed by each length. Threads, enamel, and galvanizing must all meet the strict requirements before the Underwriters' Label is attached.



CO-OPERATES CLOSELY WITH CONTRACTORS:—E. C. Hunter who is managing secretary of the Rockford Electric League, Rockford, Ill., is very proud of having seventeen contractors in the league with more coming. Hunter always knows where to find the Rockford contractors and gets a real welcome no matter how often he calls.

**Garland Mfg. Co.
Pittsburgh, Penna.**

will be appointed by the Underwriters' Laboratories, it was agreed on July 25 at an informal meeting of manufacturers and representatives of the Laboratories.

The problem of substandard cords and cord sets has been getting worse and worse until those most vitally interested felt it necessary to establish a standard. This is not expected to automatically correct the evil but it is expected to secure the approval of the industry and thereby go a long way towards bringing about relief.

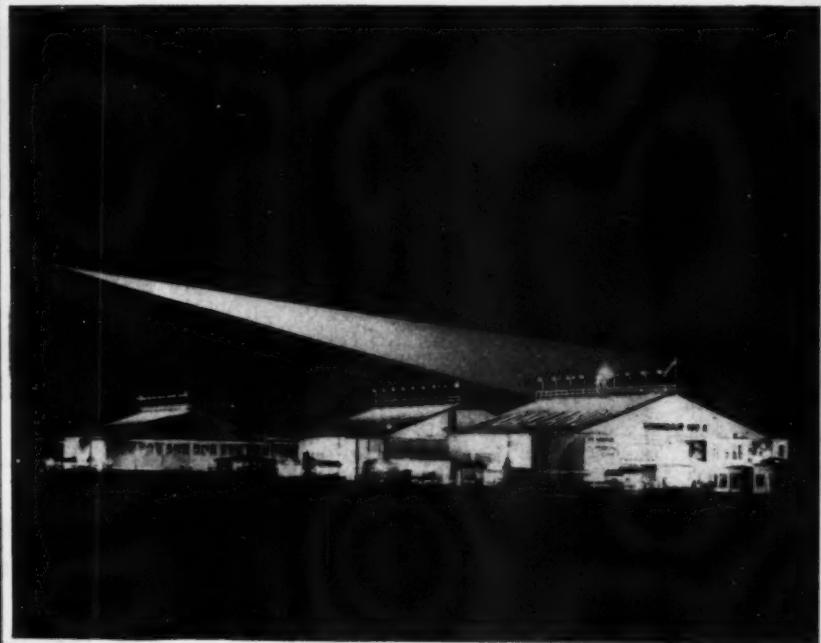
* * *

A New Armored Cable Standard

A meeting on August 9 of interested manufacturers of armored cable with representatives of Underwriters' Laboratories produced a unanimous agreement relative to a new tentative Standard for Armored Cables and Cords. The provisions of this Standard are to be applied to all new products submitted for labeling after October 1.

More than three years ago the industry requested Underwriters' Laboratories to undertake a research to determine the adequacy of armored cable for the service for which it is recognized by the National Electrical Code. A de-

Airport Lighting a new field



AIRPORT Lighting provides a fertile, profitable field for Electrical Contractors. Diamond E engineers after intensive study, research and experience are in a position to furnish the best possible electrical service-advice to contractors interested in this latest development. Diamond E magnetic switches, Switchboards, Panels, Wiring Gutter and other *high quality* products are especially adaptable to Airport Lighting installations. A notable example is the Municipal Airport at Oakland, California, where Diamond E products were used extensively. *Definite information and specifications on Diamond E equipment suitable for any proposed Airport Lighting job will be furnished upon request.*

FACTORIES
Los Angeles, Calif.
1318-1362 E. 16th St.

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Montreal, St. Louis, Toledo, Grand Rapids, Chicago, Cincinnati, Pittsburgh, New Orleans, Birmingham

Eastern Representatives with sales offices and stocks in all principal Eastern Cities

DIAMOND ELECTRICAL

MANUFACTURING  COMPANY INC.

Associated Manufacturers

Union Electric Mfg. Co.,
Milwaukee, Wisconsin

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130 West 14th Ave.

OHIO BRUSH KITS...



for SERVICE and PROFIT

Here's the OHIO family of Kits:

No. 1—for Fractional Horse-Power Motors—such as in electric fans, vacuum cleaners, washing machines, drills, buffers, etc., 300 brushes—every one with a turned neck—120 springs. **Price \$10.00**

No. 10—especially for vacuum cleaners. This Kit contains 134 brushes, 60 springs, and 25 wicks to accommodate 150 makes of vacuum cleaners. Complete chart for easy reference with each Kit. **Price \$10.00**

No. 30—For Repulsion Induction Motors. This Kit contains necessary brushes (84 brushes) for hundreds of different types of Repulsion Induction Motors—such as Wagner, Century, G.E. type of S.A. Motors. **Price \$14.95**

No. 35—for Single Phase Motors. 132 brushes in this Kit for over 300 types of Single Phase Motors such as Wagner, Century, G.E., Peerless and Westinghouse motors. **Price \$25.00**

No. 61—Spring Assortment. 420 Phosphor Bronze Springs (14 sizes) for brushes on fractional horse power motors, fans, electric cleaners, sewing machines, wash machines, etc. **Price \$10.00**

Send for these Kits—they are an immediate source of brush supply.

THE OHIO CARBON CO.

12508 Berea Rd., Cleveland, Ohio, U.S.A.

West of the Rockies:
1066 Howard St., San Francisco, Calif.



tailed report of the results of this research, including various recommendations, has been under consideration for some months. The recent action endorsing a new standard will make these recommendations effective.

One major improvement will be a control of the resistance of the armor to values consistent with proper fusing for the conductors involved. Thereby, overheating will be avoided unless currents not appropriate for the material are imposed upon the armor.

Change in voltage tests, in minimum requirements for weight, dimensions and convolutions are likewise recorded in the new Standard, as is also a statement of the principles of fibrous enclosing coverings for the conductor assemblies.

Materials labeled in good faith under existing procedures prior to October 1 should be considered standard as should materials satisfying the new text found installed at a prior date.

* * *

Lack of Capital Causes Failures

A nationally known commercial credit rating firm reports that lack of capital accounted for 35.8 per cent of business failures in 1928 and incompetence over 31.4 per cent. This situation is true of the electrical contracting business. The figures, as given by the Bureau of Foreign and Domestic Commerce, follow:

	Per Cent
Lack of capital.....	35.8
Incompetence	31.4
Specific conditions	17.7
Inexperience	4.8
Competition	3.6
Fraud	2.7
Unwise credits	1.3
Failure of others	1.3
Neglect	0.8
Extravagance	0.4
Speculation	0.2

* * *

Reno Wants Inspector

The electrical contractors of Reno, Nev., have petitioned the city council to appoint a city electrical inspector. At present there is no one person assigned to this work, the duties being taken care of by the city clerk's office.

NEW Theft-proof STEEL LOCKER



\$25.00
LIST

Made of 14 gauge galvanized steel—48" long, 18" wide and 24" deep.

Every Contractor and Wireman needs this

TOOL BOX and MATERIAL HOLDER

Extra sturdy construction with corner irons that give additional strength. Note the lock arrangement, which gives you maximum protection. Angle iron full length of box permits tray to be moved in either direction without removal to get at material stored in bottom of box. Four compartment tray holds any number of small fittings. Heavy chain holds cover in place when lid is open. We stencil your name on the box free. Order today from your jobber, or write us direct giving us his name.

ELECTRIC APPARATUS CO.

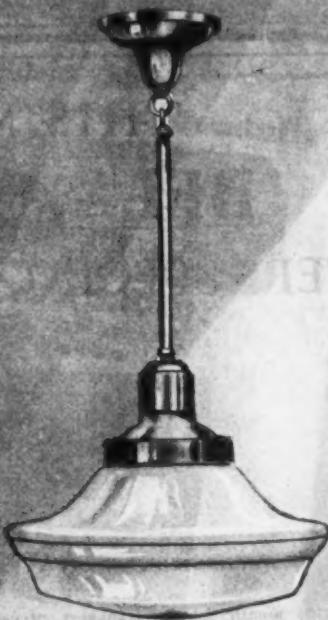
Mfg. Switch and Panel Board Steel Cabinets

702-706 N. HALSTED ST.
CHICAGO

SHADING LIGHT Inland

A Rainbow owes its beauty to harmonious shadings of light. Inland units are shades of beauty that soften otherwise sharp, glaring, unattractive white lights. Every electric light bulb in the home, office or store should be shaded. It means greater lighting efficiency and added attractiveness.

Some of Inland's recent creations shown on this page are the Modernaire for the high class shop or store, the Peacock Lantern Ball for the entrance hall or porch, the Tillsonian Unit for the office, the Kitchen and Bathroom Unit and the Open Bottom Shade for the bedroom or hall.



Inland Glass Works, Inc.
6101 West 65th St. Chicago

A Good Switch for "Ornery" as well as Ordinary Jobs

THIS ADAPTⁱ FITTING is handy on any job—but especially on those real "ornery" switch jobs you sometimes get.



Type 8510
Base only

IT FITS UP CLOSELY

Being narrower than the regular solid type gang-switch, it makes a more compact installation job especially if there's none too much room.

TAKES ALL REGULAR SWITCHES

Takes any toggle, regular or push-button switch, or two-pin receptacles; and can be supplied complete with any of them.

CAN BE MADE WATERPROOF

For water, vapor, gas or dust it can be furnished with one regular 8514 cover, as shown and with water-proof gasket. Switch lever spindle already is packed weatherproof.

Ask for Bulletin



Type 8514
Cover only



Type 8520
Switch lever spindle is bushed. Adding 8514 gasket makes entire switch waterproof.

The ADAPTⁱ Co.

2996 East 72nd St., Cleveland, Ohio

NEW YORK CITY—A. Stone, 112 East 23rd Street

PHILADELPHIA—Craven Elec. Sales Co., 30 Bank Street

BOSTON, MASS.—E. R. Bryant, 241 "A" Street

Topeka Ordinance Re-enacted

The old wiring ordinance of Topeka, Kans., was re-enacted on August 13 with provisions for the payment of \$200.00 for an electrical contractor's license and \$5.00 annual renewal, and \$2.00 for a supervising electrician's license and \$1.00 annual renewal, instead of a bond.

The ordinance provides for examination of journeymen and also for the inspection of appliances, fixtures and other electrical material offered for sale, the latter without fees.

Metallic conduit and metal molding only are permitted within the fire zones and in buildings occupied by more than two families and in churches, hospitals, schools, hotels, theatres, livery stables, public buildings and factories outside of the fire limits.

* * *

Uniform Ordinance for Bridgeport

Bridgeport, Conn., is considering the adoption of a new ordinance to include a licensing provision and the adoption of the National Electrical Code by the inclusion of Section 7 of the Uniform Ordinance. John H. Tague is the chief electrical inspector.

THIS MONTH



OFFERS SPECIAL OPPORTUNITIES



This month theatre managers prepare to attract winter crowds. Our advertising is now urging them to floodlight the fronts of their houses. Many of them will do so. Are you going after their business? Right now our advertising in school papers is showing how a floodlighted athletic field will make a winning football team. Orders worth several thousand dollars will come to the hustling contractors who call on coaches this month.

If you need help in figuring the jobs, call on our nearest representative. His name is in the classified phone book of any of these cities. Or write us.



Belson Manufacturing Co. 804 Sibley St.

Chicago, Ill.

Atlanta, Ga.
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Delaware, O.
Ft. Worth, Tex.
Gary, Ind.
Houston, Tex.
Indianapolis, Ind.

Kansas City, Mo.
Los Angeles, Cal.
Miami, Fla.
Minneapolis, Minn.
New Orleans, La.
Omaha, Neb.
Pittsburgh, Pa.
Philadelphia, Pa.

Richmond, Va.
St. Louis, Mo.
San Antonio, Tex.
San Francisco, Cal.
Seattle, Wash.
Tampa, Fla.
Tulsa, Okla.

BUDGING ENGINEER:—Although only 18 years old, Donald Crist, Overmeyer-Thatcher Co., Toledo, O., electro-mechanics, makes all the wiring layouts for his firm. When he is not drafting he goes out on the job and does wiring, thus combining practice with theory.

The New MARR Connector

No Acid
No Torch
No Solder

Wire Joints Made in 20 Seconds
BAKELITE

No Rubber Tape
No Friction Tape
No Loose Contacts



1. Insert wires, clip off ends, tighten screw.



2. To complete job, screw over the bakelite cap.

Use the Coupon for Sample and Catalog

THE RATTAN MANUFACTURING CO.

New Haven, Conn.

Complete Range of Voltage Without Change of Binding Post Connections
Rittenhouse toy transformers control voltage variations by a switch, thus eliminating the change of binding post connections and making the operation of electrical toys very simple.

The Rittenhouse line of toy transformers completely cover your field with the following capacities: Junior, 50 watts; Genesee, 75 watts; Senior, 100 watts; Niagara, 150 watts.



Niagara Toy Transformer
Is the supreme in toy trans-
formers. It has a variable
secondary voltage of from 2
to 30 volts. Permanent volt-
age for lights, stations, sig-
nals, etc., 6 to 14. Capacity
150 watts.

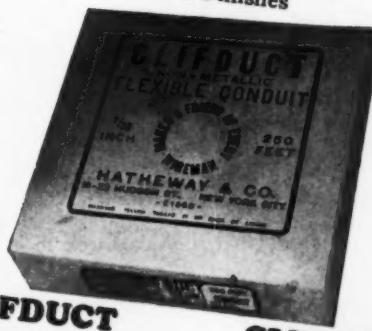
Niagara
Junior
Toy Transformer
50 watts capacity with a
secondary voltage of 5 to 15.
Capacity 150 watts.

A. E. RITTENHOUSE CO.
Honeoye Falls, N. Y.

Trade Standards in Protective Conduits



CLIFTON RIGID
Black, Galvanized and Red Finishes



CLIFDUCT
a double-wall non-metallic

CLIFTUBE
a single-wall non-metallic

General Sales Agents
HATHeway & COMPANY INC

225 Varick Street, New York City

A general sales organization—Representing nationally:

The Rattan Manufacturing Co. Clifton Conduit Co.

A. E. Rittenhouse Co.

Gentlemen:

Please send Name.....

complete infor. Street.....

tion on com'panies checked. City.....

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Split Knobs

THESE are the safe, approved knobs for all types of residence wiring. They mean better jobs at no added cost. Bull Dog Split Knobs, together with Illinois Porcelain Tubes, Cleats and Solid Knobs form a complete line of standard porcelain.



Sold Through Wholesalers

Illinois Electric Porcelain Co.
Macomb, Illinois



BUILDS POWER LINE FOR VAN SWERENGEN PROJECT:—J. A. Overmeyer, of the Overmeyer-Thatcher Co., Toledo, O., standing by the last pole of the 6600-volt line erected by his firm to furnish current for all light and power on the big dredging job for a new set of docks.

Identified Wire in Armored Cable

In the July issue of ELECTRICAL CONTRACTING, Lloyd Robinson, manager of the Youngstown Electragists, asked why it was not possible to secure approved armored cable without a white wire. This subject has received considerable attention on the part of manufacturers and Laboratories' representatives. The difficulties encountered were well set forth in the May News Bulletin of the International Association of Electrical Inspectors from which the following is quoted:

The Code rules prohibiting a white wire to form any part of a single pole switch loop, and the fact that the Underwriters' Laboratories' Standard prohibits the manufacture of any Armored Cable or Non-Metallic Sheathed Cable which does not contain at least one white wire, make it difficult in some cases to use such cables in house wiring because of the necessity of so planning and arranging the wiring that the white wire shall not appear in the switch leg or in runners between three-way switches.

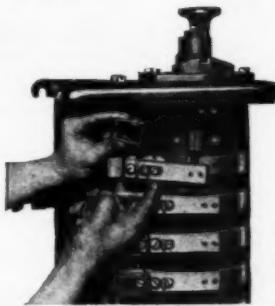
The 1929 Code suggests ways in which this difficulty may be overcome—see fine print notes following rule 500-h; briefly, that the white wire may be rendered "unidentified" by painting it black or by other effective means, such as perhaps covering it where exposed in outlet boxes with friction

UNION

The
Most Complete Line of
Drum Controllers
in the World

HERCULES Drum Fingers

The Union HERCULES drum finger is the result of over twelve years' experience in the designing and manufacturing of drum controllers and drum fingers, and represents the very latest in design. Every desirable feature is obtained in this finger construction.



A view showing the simplicity of removing the contact pressure spring for inspection of the contact tips. No tools are required for this operation.

Base Support. Stamped steel. Two parts—a rigid supporting base and a movable base member. The latter is hinged and gives the finger its movement to prevent stubbing.

Base Mounting. Double rod mounting. Mica insulated. Indestructible.

Finger Bar. Stamped steel. Forged copper tip—renewable. Contact bar is also renewable.

Tension Spring. Oil tempered coiled wire, formed to fit around the finger bar attachment screws. Readily removable. Two-prong tension. Tension spring carries no current.

Pig Tail. Laminated. Complete circuit from finger tip to lug. Non-corrosive.

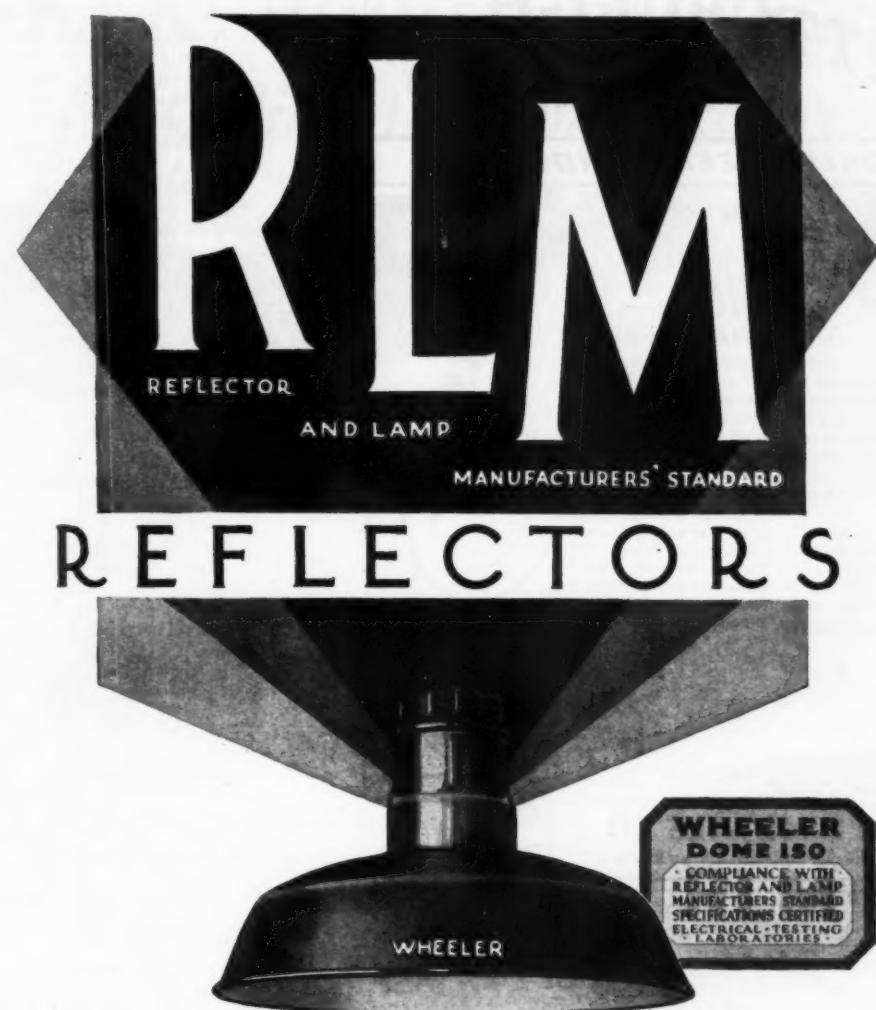
Adjustment. Provided by a screw which takes up the wear on finger tip. Lock spring holds adjusting screw in position.

Wire Connections. Each finger is provided with a solder lug. Perfect contact between wire connector and segment, assuring a low contact resistance.

For complete details see our Publication 500

UNION ELECTRIC MFG. CO.
10th and Juneau, Milwaukee, Wis.
Manufacturers of
Electric Motor Control Apparatus

*Also Associated Manufacturer with,
and Eastern Distributor for*
DIAMOND ELECTRICAL MFG. CO.
Los Angeles, Cal.
Magnetic Motor Control Apparatus



RLM—a symbol of the most efficient and modern design in reflectors for general illumination! The RLM label is the sign of compliance with rigid specifications set up by the Reflector and Lamp Manufacturers—and appears only on their products which have been approved by the Electrical Testing Laborator-

ies. It identifies a reflector perfect in contour, dimension, finish and performance—and serves as the surest guide to tested quality in industrial lighting equipment. Upon request, Wheeler engineers and representatives will gladly provide lighting recommendations and complete information on RLM Reflectors.



Above is shown a typical installation of Wheeler RLM Reflectors. Note the even distribution of light.

WHEELER REFLECTOR CO., BOSTON, MASS.

NEW YORK

ATLANTA

CLEVELAND

Sales Offices: St. Louis, Indianapolis, Los Angeles, San Francisco, Seattle; In Canada: Canadian General Electric Co., Ltd.

PITTSBURGH STANDARD

GALVANIZED CONDUIT

It's the Enamel Coating Makes Fishing Easy

THE lure of rod and reel are enhanced a hundred fold by a good line—an *enamored* line. Without bait or weight an expert will cast an enamored line 100 feet out over the water. He will pay up to \$7.50 for a single line—if it is a *good enamored* line.

The enamel protects the line, saves it from deterioration. The enamel gives a surface that will whiz through the ferrules for the 100-foot cast.

With Pittsburgh Standard,

**ENAMELED METALS CO
PITT/BURGH, PA.**

tape, or by using a three-wire cable and cutting off the white wire close to the armor at each end, thus rendering it dead, and leaving a black and a red wire for use in the switch loop, or by so routing the runs that the hot wires of the circuit are taken first to the switch box, where the single pole switch can be cut in readily in the black wire, instead of running the hot wires first to the ceiling or bracket outlet and then looping them back to the switch.

However, all of these methods involve more or less thought and labor, and in some cases require more footage of cable than if the wireman were free to use cable as it suited his convenience.

Other common instances where cables containing a white wire (or two white wires) cannot be used without conflict with the Code are in the wiring of two-phase and three-phase circuits, where no wire is grounded, and for two-wire motors and appliances at 220 volts if supplied from the outer wires of the three-wire single phase or three-wire 110-220 d. c. circuit since these wires, not being directly connected to the ground, shall not be white.

This puts Armored Cables and Non-Metallic Sheathed Cables in a disadvantageous position when compared with knob and tube wiring, conduit wiring, and raceways in all of which systems the wireman may install black or colored wires to suit his convenience and the necessities of the specific case, and has resulted in frequent requests from contractors and engineers to manufacturers to furnish Armored Cables containing only black or colored wires, omitting white ones.

Under present conditions, this cannot be done since such cables would not be approved by the Underwriters' Laboratories and the manufacturer would not be permitted to attach Underwriters' Labels, and if furnished without Underwriters' Labels, the field electrical inspector would be in duty bound to not approve them on the job. Therefore, it follows that if such cables omitting the white wire are to



Apartment House Telephones

Apartment House telephone requirements are particularly severe and apartment house janitors are not telephone experts. To give continuous satisfactory service apartment telephones must be solidly built and must have real transmitters and receivers.

Holtzer-Cabot telephones for Apartment House use are of the same high quality that has made the name of Holtzer-Cabot for over fifty years the hallmark of quality in the manufacture of electrical apparatus.

Our new bulletin 148 Sec. C. is just off the press with full information and prices, we will be glad to send you your copy on request.

The Holtzer-Cabot Electric Co.
Boston **Chicago**



SPECIALIZES IN INDUSTRIAL WORK:—George May, Rockford, Ill., electrician should be proud of his business and his equipment and his men. Mr. May is on the left with some of his boys who have just come in after a day's work. The May Electric Co. does a large amount of industrial wiring around Rockford.

"HooKEx" Plug and Receptacle for Ceiling Lighting Fixtures



Complete Device
No. KX-3744

FIG. 1



Cover, Hook and
Receptacle Only
No. KX-3745

Plug or Cap Only
No. KX-3746

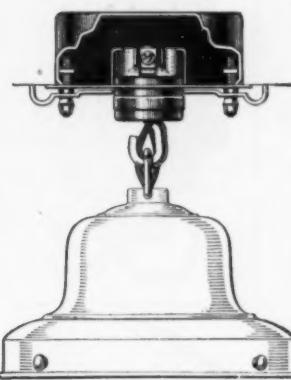
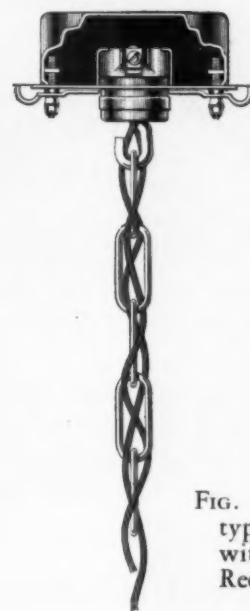


FIG. 2. Similar to Figure 1
except with close to
ceiling holder.

FIG. 3. Chain suspension
type of fixture connected
with HooKEx plug and
Receptacle.



FIG. 4. Chain suspension
fixture with canopy.
The plug is passed
over the hook, and
inserted in the recep-
tacle, the top loop of
the suspension is then
hung on the hook
and the connection is
complete. The canopy
can then be fastened
against the ceiling as
usual.

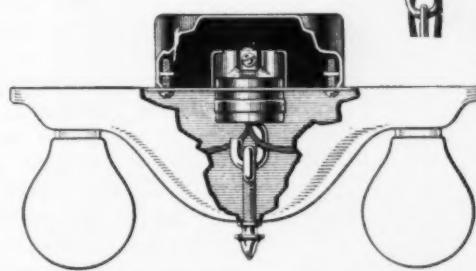


FIG. 5. Ornamental ceiling fixture type—showing
methods of connection and suspension.
The threaded eye, fitting over the hook, re-
ceives the ornamental nut to fasten the fixture
against the ceiling.



FIG. 6

"HooKEx" Receptacle,
with plug "plugged
in," installed in a standard
4-inch octagon outlet box.
The outlet box is shown cut
away.

THE BRYANT ELECTRIC COMPANY
BRIDGEPORT, CONN., U. S. A.

NEW YORK

PHILADELPHIA

CHICAGO

SAN FRANCISCO

Manufacturers of Superior Wiring Devices Since 1888 - Manufacturers of HEMCO Products



Send for our
Bulletin 527

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For
LIGHTING
SYSTEMS and other
INDUSTRIAL USES

REPLACE condemned balancing coils with transformers that conform to the New Code. They are safe, economical and efficient in operation.

Connect lighting load to 220, 440 or 550 volt power mains.

A field for business during the slack months.

Representatives desired in principal cities and Industrial centers.

TRESTER SERVICE ELECTRIC CO.
49 E. Wells St., Milwaukee, Wis.

"Trester Service Since 1908"

Still the last word to-morrow—

Changes in the electrical industry are so rapid that today's work has to be done with an eye on to-morrow—and that's what alert electrical contractors do. It explains their success.

For them, the National Electrical Exposition at Grand Central Palace, New York, will present a picture of progress to help them make the work they do today still the last word to-morrow.

Here exhibited under one roof will be found all that's newest and best in equipment, machinery, appliances, devices, tools, instruments, materials, supplies and accessories for the generation, transmission, distribution, measurement, control and application of electricity.

To be sure that you are overlooking nothing that could improve your work, your reputation and your profits—come!

NATIONAL ELECTRICAL EXPOSITION

Auspices of
New York Electrical League
New York Electrical Board of Trade

Grand Central Palace, New York
October 7 to 12, 1929

Management of
INTERNATIONAL EXPOSITION CO.
Largest Industrial Exposition Organization
in the World

be manufactured in the future, changes will have to be made in the Underwriters' Laboratories' Standards, the National Electrical Code, and the various Municipal, State, and other Codes which now call for the standardized construction containing the white identified wire.

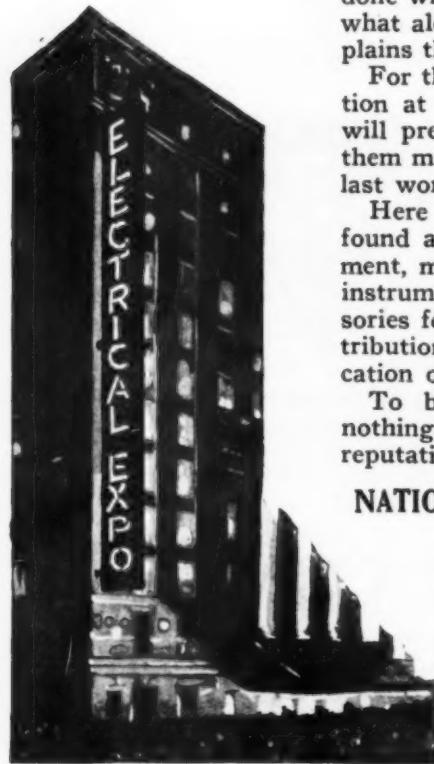
It would seem to be a very simple matter to accomplish these changes, but there is a serious doubt that the game would be worth the candle, because many complications will arise perhaps just as undesirable and maybe more costly in the long run.

Let us study for a moment what would have to be done by the manufacturer, and how it would affect other electrical interests; first, the electrical jobber, then the electrical contractor, and finally, the electrical inspector.

The manufacturer would have to make and carry extra stocks of twin, triple and four-conductor cables in all sizes of conductors, those containing a standardized white wire, and those containing various combinations of white and colored wires. A reasonable consideration of these possibilities shows that there would be, in place of the three present standard combinations, at least seven combinations for each size of wire, and, considering only the sizes of wire permitted by the Code for non-metallic sheathed cable, there would be 42 combinations of wire instead of the present 18.

Before the armor is placed, these twisted cables are covered with an outer cotton braid or an outer kraft fiber wrapping. These would have to be "stocked" in different places on the factory floors, and very carefully handled, otherwise, mistakes would constantly occur, since, after the outer wrappings are on, it would be impossible to tell by outward appearance one kind from another, which would also be true after the armor was applied, and the extra cost would naturally increase the selling price.

Manufacturing costs are always increased when more and more varieties of anything have to be made, and since there would be no increase in the total output, there would simply be less



MOVES TO NEW HOME:—When H. C. Scannell, of the Scannell Electric Construction Co., Toledo, O., returns from Europe he will find his company housed in this modern structure at 1943 Canton Street, four blocks from the old place, which was at 1609.

Remote Control Application to Lighting Circuits



Bloomfield Open
Hunt Club
riding arena
Bloomfield Hills
Mich.

by "Diamond H"

Type "F"
which controls
the individual circuits

These illustrations represent an interesting use of "Diamond H" Remote Control Switches in the exclusive Bloomfield Open Hunt Club at Bloomfield Hills, Michigan. The building pictured above is devoted to riding, and covers a very large area.

The lighting of this large area is controlled by Type "F" Remote Control Switches. Momentary Contact Switches are conveniently placed to operate the individual circuits.

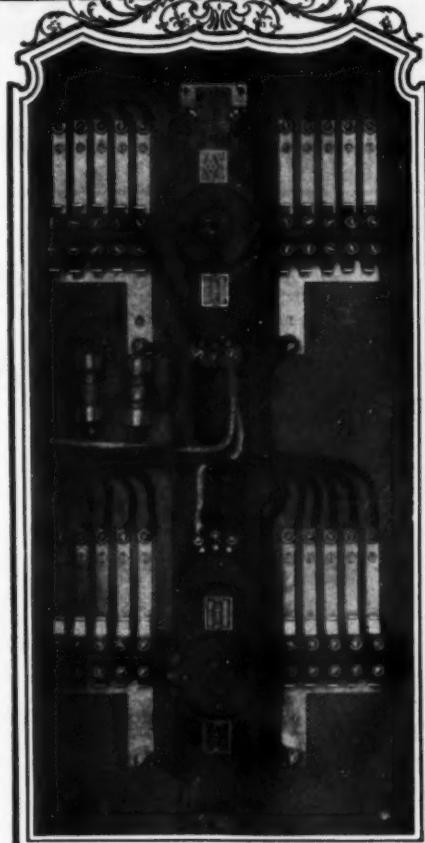
In addition, all of the circuits are hooked up with two Type "H" Multi Circuit Switches shown at the right. These switches are operated by two Master Momentary Contact Switches, so that all of the circuits can be turned on or off instantly.

Engineering firms thruout the country have worked out interesting methods of control of many lighting circuits thru the use of "Diamond H" Remote Control Switches.

We have switches that cover every form of lighting control. America's finest buildings are "Diamond H" controlled with lower wiring costs, economy in the use of current and convenience in operating circuits.

Our engineers are ready to help you with any problem of light control.

Architects: O'Dell & Diehl, Detroit, Mich.
Engineers: Sternfels & Brown, Detroit, Mich.
Elec. Contr.: Reeves Elec. Co., Pontiac, Mich.



Two Type "H" Multi Circuit
Switches which control all
of the lighting

THE HART MANUFACTURING CO.
HARTFORD, CONN.
BOSTON NEW YORK PHILADELPHIA DETROIT CHICAGO
MINNEAPOLIS SAN FRANCISCO TORONTO

DIAMOND H SWITCHES

Fretz-Moon

FRETZ-MOON TUBE CO., Butler, Pa.



It is easy to get the right conduit—just ask for and insist on FRETZ-MOON!

RIGID CONDUIT

THE ANSONIA ELECTRICAL CO.

ANNUNCIATORS



No. 303

The Ansonia line of Annunciators offers a variety to fit every conceivable demand. For houses, hotels, offices, elevators, etc. They offer mechanical and electrical perfection which only can be obtained by years of specialized manufacturing experience. These may be obtained through any electrical jobber.

Write for 64-page catalog E which illustrates annunciators and our complete line of other electrical house goods.



THE ANSONIA ELECTRICAL CO.
ANSONIA, CONN.

ANNUNCIATORS — BELLS — BUZZERS — PUSH BUTTONS

ELECTRICAL HOUSE GOODS

of each kind of cables made, therefore, each would cost more than a large run of one or the other type alone.

The jobber would have even more difficulty than the manufacturer in carrying and identifying double stocks and mistakes in shipments would be greatly increased, to say nothing of the increased cost of business due to duplicating stocks and doubling the number of items to be accounted for and billed.

When it comes to the contractor, he also would likely be continually in hot water because of accidentally using a cable with black or colored wires where one with an identified white wire should be used, or vice versa. He would have to order and take care of not more cable, but more kinds of cable, all the way from making up his bill of material to final inspection, and would probably find that it was costing him more on this account than under present conditions where a little thought and carefulness in planning would get him around what slight difficulties there are.

Finally, the inspector would be more or less affected, because he would have to be more than ordinarily careful in his inspections to see that the proper selection from two types of cables had been made by the contractor, whereas now he has to think of but one, and mistakes are only likely to occur in connection with single pole and three-way switches, whereas with two types of cable on the job, the one with identified wires in it might accidentally be installed anywhere on the job, thus defeating the system of identification now in vogue with its many advantages.

Summing the whole matter up, it would appear that the cure would be worse than the disease.

* * *

A. K. Baylor

Armistead K. Baylor, 61, General Electric commercial engineer and veteran of the electrical industry, died suddenly early on the morning of August 1 at Ipswich, Mass. In 1891 Mr. Baylor went with the Thomson-Houston Electric Company at West Lynn, Mass., and moved to Schenectady, N. Y., in 1894 when the headquarters and main offices of the General Electric Company were established there. In 1896 he went abroad to become manager of the traction department of the British Thomson-Houston Company, becoming general sales manager there. After 14 years he returned to this country to re-enter the General Electric organization, and for several years was in the commercial general department. Mr. Baylor was also vice-president, director and a member of the executive committee of the Edison Electric Appliance Company.

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Wm. G. Hazel

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make
A Profit



Cyril D. Henderson

They are President and Vice-President respectively of the Henderson-Hazel Corporation, publishers of the NATIONAL ELECTRICAL RESALE PRICE SERVICE which hundreds of successful Contractors and Dealers all over the country have adopted as their Silent Partner.

We watch the markets and suggest to our clients what to charge for all standard electrical supplies as well as appliances. All prices are based on today's cost to which we have added a percentage to take care of overhead and leave a reasonable Profit.

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It is making hundreds of dollars extra profit for Contractors, both large and small and if you are not satisfied with your profits, we will gladly send you full information. Since the Service is supplied only to those actually engaged in the Electrical Business, please attach the coupon below to your letterhead.

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THE AGE OF LIGHT

LIIGHT'S Golden Jubilee is here! Fifty years ago the world first saw the incandescent light—Forty years ago the Electrical World first heard of Pass & Seymour, Inc., a company established at that time for the purpose of manufacturing Electrical Wiring Devices.

Fifty years after the discovery of the incandescent light, and forty years after the establishment of this company, the world has been forcibly awakened to the possibilities of outdoor decorative lighting.

MERCHANTS AND MANUFACTURERS everywhere are now realizing the possibilities of outdoor illuminated displays of their products, bearing in mind the fact that "Trade Follows Light."

P&S Ready-Wired Sockets are designed to meet all the requirements of decorative lighting. They are supplied in any length up to 500 feet, and with any spacing of sockets from 4 inches to 30 inches on centers. They are supplied ready for immediate use. They are furnished with either Porcelain or Cold Molded sockets, in the Edison Base size and with Bakelite sockets in the Intermediate Base size. They are approved for either indoor or outdoor use.

P&S Decorative Sets

P&S Decorative Sets have become very popular and are used extensively in decorating doorways, hedges, shrubbery, etc.

P&S 2000 is equipped with 10 Cold Molded Edison Base sockets, spaced 20 inches apart with an attachment plug on one end for connecting to main circuit or additional strings.

P&S 2002 is an Intermediate Base Decorative Set of the multiple type. This set consists of 7 Bakelite sockets complete with genuine Mazda lamps in colors, spaced 20 inches apart. There is a P&S connector at one end of the string and an attachment cap on the other, spaced 10 inches from the nearest socket.

P&S 2003 Same as **P&S 2002**, except that attachment plug cap is located 6 feet from the nearest socket.

P&S 2006 Same as **P&S 2003**, except that the string consists of 25 Bakelite sockets and colored Mazda lamps, spaced 20 inches apart.

P&S 2016 Same as **P&S 2003**, except that the string consists of 50 Bakelite sockets and colored Mazda lamps, spaced 20 inches apart.



P&S 2003

P&S materials are sold through Jobbers. Ask your Jobber for information regarding our complete line of Porcelain and Electrical Supplies, or write to us direct.

PASS & SEYMOUR, Inc.

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A ROLL O' TAPE

Electrical flashes gathered among the Big Wire-and-Pipe Men by

Coit A. (Duke) Smith
Field Editor, ELECTRICAL CONTRACTING

DO the contractors swear by John Kuhlemeyer and his work? Listen. He was at Nela Park while Light's Golden Jubilee was being rehearsed, and there were fifty contractors from Akron and eighteen from Youngstown attending. When John left for Columbus the whole sixty-eight contractors just piled on the train and went along with him. Louis Krepleever, manager of the Toledo Electrical League told me this and added that the boys were all paying their own expenses.

THE losing of ladders seems to be a big item with our Big Wire-and-Pipe Men. The latest suggestion is that the company name or some symbol sufficiently individual, be burned on all ladders with a branding iron.

THE hard luck story of the year comes from J. W. Steinmetz, Chicago electrician. Burglars got into his home, taking his famous ring and other jewelry, with a sum of money besides. To make it worse, the family dog went Rin-Tin-Tin and slept peacefully during the robbery. Then, when Mr. Steinmetz came home late a few nights later, the dog woke out of a sound sleep and put on a storm that would drive away an army.

SOME contractors specialize in one thing and others in other things, but mostly they stay at home. The Fowler Electric Co., of Toledo, O., however, being specialists in electrical installations on bridges go all over the country, San Francisco and Providence, R. I., being the farthest West and East.

SOMETIMES a small thing will set a man thinking and start him on the road to better business and more profits. "A small job on which I lost woke me up," says a Minneapolis contractor. "There were 37 outlets in the house. I bid on the basis of \$2.50 per opening and added \$5.00, making a total of \$97.50. My cost was \$84.50, leaving \$13.25 profit (?) What woke me up was figuring my overhead, which proved to be 29 per cent. Never again!"

THE Schulte Electric Co., Cleveland, O., has offices that are exceptionally well arranged and equipped. There is plenty of room to move about, the reception room is very large, and for their own work there is a fine drafting room.

GERRITT Dekker, head of Dekker Electric Co., Chicago, thinks it is all wrong to omit ceiling outlets from apartment house installations. They should be put in even if they are not wanted. Different tenants have different tastes, and it is expensive to put in ceiling boxes after the job has been completed. He says too that styles rotate and we never know when the ceiling light will be all the rage again.

THREE'S justice after all. A warehouse owner gave a certain contractor a job of wiring, but wouldn't buy the lighting fixtures from him. "I can buy those at wholesale," he said gloatingly. This naturally didn't please our subscriber at all, and it didn't take him long to think up a fast one. He remembered some obsolete units in his shop that he had acquired for a song. He figured what they were worth, allowing a nice profit, added the sum to his bid and informed the buyer that this figure would enable him to save money even considering the wholesale price he could get, and would give him "better" fixtures. Mr. Greedy grabbed at it and the contractor went away singing.

ONE feature of ELECTRICAL CONTRACTING's Resale Price Schedule has been mentioned by so many contractors that they must be quoted collectively. "In addition to being the best means of figuring bids quickly and accurately," they say, "this schedule is the most convincing thing we can show the prospect to prove that our prices are right. They respect these figures because they come from a publication of nation-wide scope and reputation."

C. E. HARRISON, Harrison Electric Co., Indianapolis, Ind., had the honor of wiring the first all-modernistic store in his city. The windows, the walls, the stairs, in fact everything in the place is built and decorated in that zig-zag style so dear to the hearts of the indoor landscapers. Of course this called for special study in designing the lighting installation, and Harrison did a real job.

ALTHOUGH it means only a small job in each case, there is some nice potential wiring business in the lighting of signs which are placed in front of homes along the highways, announcing accommodations for tourists. It should be an easy matter for local contractors to sell an installation of goose-necks and steel reflectors to all the householders who have signs.



DANVILLE STATE HOSPITAL

Architect
F. Arthur Rianhard

Electrical Contractors
Franklin Electric Construction Co.
Ross Electric Construction Co.

BEAUTY and DEPENDABILITY WITH ALABAX

MUCH time and money was spent to find a suitable location for the new Danville State Hospital, Danville, Pa. That this expenditure was attended by success is evidenced by the above illustration.

In a like manner much consideration was given the selection of lighting fixtures for this institution with the result that P&S ALABAX Porcelain Lighting Fixtures are now installed throughout.

P&S ALABAX Porcelain Lighting Fixtures were selected because of their beauty, safety, economy and durability, and because of the fact that there was an ideal fixture for every fixture requirement.



The ALABAX Fixture illustrated above is one of the types of ceiling units installed in the Danville State Hospital. This fixture and many others are illustrated in our ALABAX Catalog. Write us for a copy.

All P&S Lighting Fixtures are made in neat and attractive designs. They are furnished in either the plain white finish, or in a variety of all-over colors and stripe decorations. However, since many of the leaders in the medical field have acknowledged the use of color as a curative, P&S ALABAX in beautiful permanent colors has been in even greater demand. A very important feature about P&S ALABAX in colors is the fact that the colors are permanent. Their finish is "fired in" just like it is in the finest china. Years and years of exposure and cleaning will not dull their lustrous surface. As for cleaning, by merely wiping the fixture with a cloth dampened with a disinfectant they are made surgically clean.

The many other features of P&S ALABAX Porcelain Lighting Fixtures are described and illustrated in our ALABAX Catalog. We will gladly send you a copy on request.

PASS & SEYMOUR, INC.

DIVISION C, SOLVAY STATION, SYRACUSE, N. Y.

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ELECTRICAL CONTRACTING
520 N. Michigan Ave., Chicago

A Free Sample for You!



T&B No. 3670 Line

Protective Type Ground Fitting

The new Code requires a protective ground fitting. Inspection Authorities also demand it in many places. The T & B No. 3670 meets every requirement.

It is a sure cure for all grounding trouble.

It takes $\frac{1}{2}$ " to 2" pipe.

It completely encloses the ground wire and protects it from injury. Bonds the ground conduit rigidly to the water pipe and provides a ground for both the conduit system and the system neutral conductor.

A FREE SAMPLE of this Ground Fitting will be sent to every reader—for a short time only. To get your sample, fill in and mail the coupon below.

Can be used in any location—on service, house conduit or to ground both. Easily installed even in "tight" locations. Can be used when ground pipe and water pipe meet at various angles.

Compensates for expansion and contraction of water pipe. Cannot be loosened by electrolysis. Protects life and property—saves time on the job—makes friends for the contractor. SEND FOR YOUR SAMPLE AND SEE FOR YOURSELF. Just use the coupon below.

PRICES

Stand. Pkg.	Net Cost Each
50	\$0.50
20	.85
10	1.35
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10	1.35

Only One
Fitting to Each
Contractor.
This Offer Good
Until
October 10th.

The Thomas & Betts Co., 15 Park Place, New York, N. Y.
Send me a FREE SAMPLE of your No. 3670 Ground Fitting.

Name.....

Address.....

Southern Inspectors to Meet at Atlanta

The first annual convention of the Southern Section of the International Association of Electrical Inspectors will meet at the Ansley Hotel, Atlanta, Ga., October 15 and 16. The Code committee has submitted for discussion reports on fractional all code articles.

* * *

Curbstoner is Most Costly Contractor*

By John Kuhlemeyer

THE mistaken idea has prevailed for a long time that the so-called curbstoner could operate more efficiently and cheaper than a responsible contractor, and he has been the pet and ideal of some utility men. I am really sorry to have to explode that theory. I have had the opportunity to study the business methods of many electrical contractors, and know and can prove that the curbstoner is the most inefficient and expensive contractor in existence. While he may do a job of housewiring below labor and material cost, or



John Kuhlemeyer

even install a range on that same principle, he robs the people he is doing business with on other items. He does not do that knowingly or consciously; he feels it is the proper thing to do, or in some cases is entirely unaware of his bad practices.

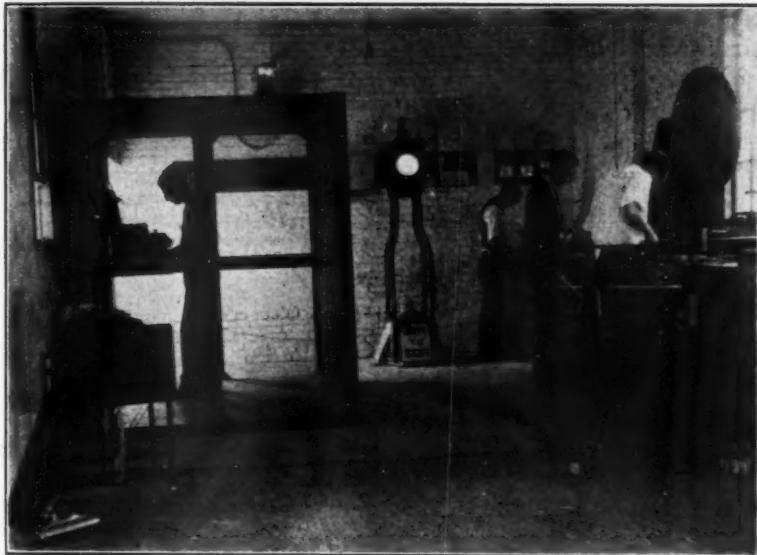
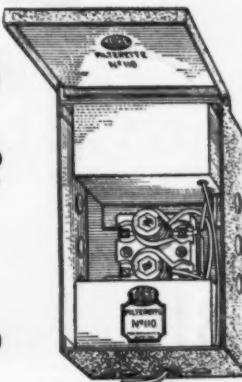
The responsible contractor, whether large or small, understanding his business can, and does, produce and sell cheaper as a whole than the ignorant contractor or curbstoner.

In practically all cases that have come under my observation, the

*Abstracted from address at Camp Co-operation IX, Association Island, Aug. 3, 1929.

Electrical Contractors *whip Radio Interference* with TOBE

“FILTERETTES”



Tobe Deutschmann Laboratory

The Tobe Deutschmann Corporation maintains a special laboratory, a section of which is shown above, devoted exclusively to the examination of electrical appliances and apparatus, and the designing of suitable Filterettes therefore. Note, in the illustration, the diversity of apparatus sent in by manufacturers—the dental engine, the vacuum cleaner, the three different sign flashers, the dictaphone, the adding machine, the electric fan, and by no means least, the diathermy machine, shown in the screened compartment at the left.

Here's a new and untouched market for every electrical contractor . . . With Tobe Deutschmann equipment you can go out and get business that will pay you well . . . “Filterettes” overcome annoying effects of “man-made static”—sign flashers, elevator motors, electric refrigerators, X-ray machines, etc., that frequently cause radio interference . . . In every case any contractor familiar with Tobe Deutschmann products can install the proper “Filterette” and eliminate the annoyance.

*Write for Bulletins that show you
how to get this profitable business*

If you want to enlarge your field of usefulness—and of course you do—write today for the Tobe Deutschmann bulletins, which are sent absolutely free. These

helpful bulletins take up various problems of radio interference and show you how other contractors are making money by installing Tobe Deutschmann “Filterettes.”

TOBE DEUTSCHMANN CORPORATION
FILTERETTE DIVISION

CANTON, MASS.

Pioneers in Eliminating Interference Problems of Every Description





**A
BIG
MONEY SAVER**

Eliminates triple handling—unwinding—measuring and rewinding wire, thus saving time and money. Manually operated—reels wire into neat coil, automatically counting and registering number of feet. Strongly built of heavy selected materials so as to last a lifetime.

It Pays for Itself

Send for bulletin.
Write us or your jobber.

**Minneapolis Electric
and Construction Co.**

80 S. 12th St.

Minneapolis Minn.

New Conduit Type Cable Support



A Simple Two
Piece Cable
Support for
Vertical Runs.
Can furnish
these in split
type if wanted.

A Compact End Fitting



One that has a
canvas bakelite
insert made to take
one to nine
wires.

Bakelite Insulated Bushing



An insulated
bushing made
to prevent serious
and disastrous
grounds.

O. Z. CABLE SUPPORT CO., INC.
45 Bergen St. Brooklyn, N. Y.

Send us your latest bulletin with prices

Name
Address

true and actual overhead (related to volume) of the cut-throat contractors was from twenty-five to fifty per cent higher than that of the better type of contractor. It is only when work is sold below actual cost that the competent contractor suffers.

It may interest you, gentlemen, to know that the contractor who does all his own work and does not employ any men has the highest relative overhead of them all. The saddest part of this picture is that the man doing his own work can not under any circumstances, no matter how favorable, make even journeyman's wages under fair competitive conditions.

As long as the electrical contractor is the backbone of house-wiring, his economic place in the industry must be sound and healthy in order that he can do his proper share in the market development plan.

We can ignore and refuse to understand facts as long as we want to, but we will never be able to rear a worthwhile structure unless we are willing to start with a solid foundation.

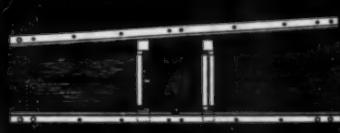
Starting or attempting to operate a league in a town or community where housewiring is conducted on an unsound and uneconomic basis is just like starting a farm in the jungle or on timber land. Just as our own pioneers had to clear their land before they could cultivate it, so it is necessary to clear up the local housewiring situation before lasting satisfactory results can be obtained from promotional activities.

* * *

New Baltimore Code Under Fire

The new Baltimore electrical code is meeting opposition from the real estate board and the Consolidated Gas Company on the grounds that elimination of armored cable and several other restrictions have seriously increased the cost of wiring. An effort is now being made to have the local code committee, which is headed by Chief Engineer Goob, remove from the code all restrictions outside of the National Electrical Code.

KRUSE



Switch Box Supporting
Strips with or without Lath Holders

16 $\frac{1}{2}$ -18 $\frac{1}{2}$ -20 $\frac{1}{2}$ -22 $\frac{1}{2}$ -24 $\frac{1}{2}$ -26 $\frac{1}{2}$, In. Lengths

Used by Contractors every
where. A leader for ten years.
Stocked by all leading job-
bers. Millions of sets
used yearly.

WE ALSO MAKE
Kruse Bar and Old Work Hangers
Peerless Type A Old Work Hangers
Non-Metallic Sheathed Cable Straps
Fitz-M-All Outlet Box Hangers
"Ready" Service Fittings

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For Prices and Literature

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MUNCIE, INDIANA

You Can Underbid and Make More Profit

By Using **IDEAL** Universal Wire Connectors



Solderless—Tapeless

Do a 10 minute job in 1 minute
and make better mechanical and
electrical joints.

One size fits all common wiring
joints, motor taps, etc. Special
large size for industrial use. Special
small size for fixture wiring,
joints in shallow canopies and ap-
pliances.

Approved by Underwriters' Laboratories

Mail coupon today

Ideal Commutator Dresser Co.
1041 Park Ave., Sycamore, Ill.

929

Please send me one trial carton of 100
"Standard Universal" Connectors at \$3.35.
 Please send me a free sample connector.

Name.....

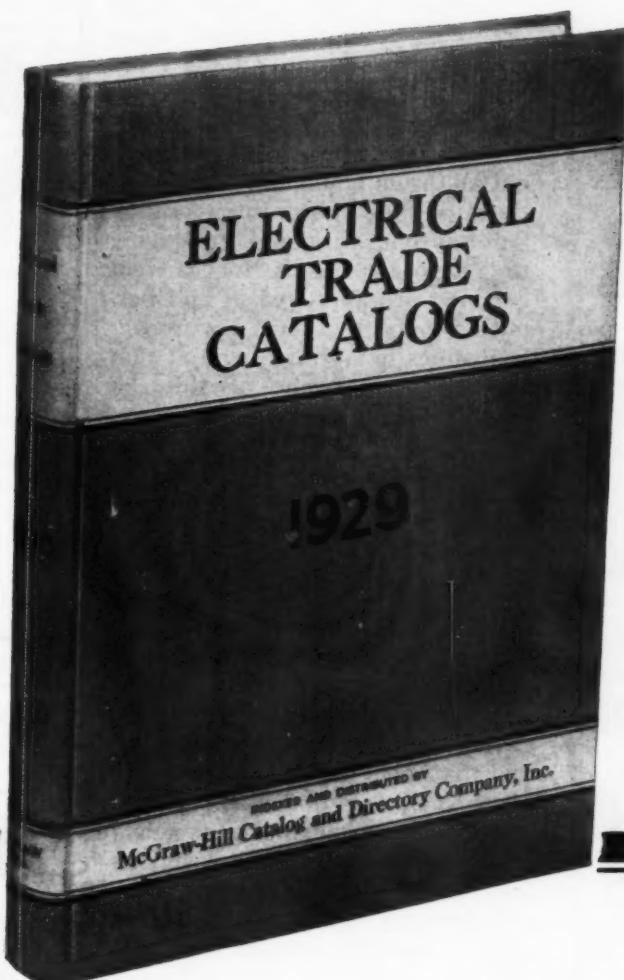
Address.....

City.....

State.....

Your Jobber.....

The Catalog Place of the Electrical Trade



Look it up in this Binder!

The Green Book with the Orange Bands — whenever you need information on what or where to buy!



REFLECTORS for all PURPOSES



No. 871

RLM Standard Dome. Porcelain enameled green outside—white inside. Made for 100, 150 and 200 watt lamps.



No. 876

Shallow Bowl Reflectors. For general illumination of mills, machine shops, garages, etc. Made in four sizes for 25 to 200 watt lamps.

OUTDOOR FIXTURES



No. 877

For use around barns, yards, garages, etc. Reflector is porcelain enameled and all iron parts are electro galvanized making complete fixture weatherproof.

Catalogue illustrates many other Oamco reflectors which are designed to meet the requirements of modern lighting. Write for it today.

OVERBAGH & AYRES MFG. CO.

413 S. Clinton St., Chicago, Ill.

German Experience With Concentric Wiring

Experience with concentric wiring in Germany, or "Rohrdrahte" as it is there called, has not been very satisfactory, according to a letter recently received from the Berlin State Electric Works.

"Certain types of these 'Rohrdrahte' containing several wires insulated from one another, not using the exposed metal sheaths for current carrying," says the letter, "are approved of and permitted throughout Germany. Other types of the 'Rohrdrahte' containing but one wire and employing the exposed sheath for current carrying are approved of and permitted only by very few power companies in Germany and at that for dry rooms only. Besides, if employment of these types is permitted, the exposed sheath must only serve as neutral of a wiring system.

Poor Joints

"The reason why the employment of this type of wiring has been largely prohibited and restricted in Germany is, that it is difficult to produce good, reliable joints of the exposed sheath necessary to insure good continuity, and that, once good continuity has been reached, it may easily be destroyed by mechanical, chemical or other influences. However, as soon as the sheath serving as neutral becomes interrupted, the exposed metallic sheath obtains voltage against ground bringing about the danger of personal injury or material damage. This danger is so much the graver as the interruption of the neutral will hardly be noticed immediately, rendering it impossible to provide protective means in time.

Another Type

"In place of these types of wiring having only the metal sheath carrying current, there is another type on the market having a bare solid copper wire folded and rolled into the metallic sheath. The main purpose of this bare wire is to insure proper reliable joints. This type of wire is being employed at many places in Germany, and we have been informed that its use is steadily increasing. The wiring having been done

Rubber Insulated Wires and Cables

Insulating Tapes and Splicing Compounds

Raven
Core
Wires
Grimshaw
Tapes
Competition
Tapes

NEW YORK INSULATED WIRE CO.

Main Office
114 Liberty Street,
New York City

Factory:
Wallingford, Conn.

Twenty-Six Million (and more)

PAINE
Spring Wing Toggle Bolts
Now In Use—
They must be good!

Merit alone put Paine Spring Toggles highest in the opinion of the electrical contractors of the world. If they can save time, money and trouble while giving their customers a better job, you can do the same. Get a Paine Toggle Bolt and see for yourself. Mail the coupon.

Stocked by jobbers everywhere.



The
PAINE
Company

2947
Carroll Ave.
Chicago, Ill.

79
Barclay St.
New York, N.Y.

Coupon Brings Sample

The Paine Co., 2947 Carroll Ave., Chicago, Ill.
Please send me a sample Paine Spring Wing Toggle Bolt.

Name.....

Address.....

City..... State.....



**"Big Things
Are Happening—
Keep Posted!"**

Contractor - Dealers who are not receiving the Wiremold Business Builder should send us their names at once—especially in time to secure the current issue containing full details of the PRIZE CONTEST BETTER LIGHTING CAMPAIGN which is now about to break.

WIREMOLD

Each issue of the Wiremold Business Builder brings news of timely sales campaigns, sales aids and practical data. No live Contractor-Dealer can afford to be without it. Send in your name. It's free.

The
Wiremold Company
Hartford, Conn.

Trade

Mark



**A 1 WIRE
Connectors**

THE BETTER KIND

A perfect joint every time plus simplicity and dependability.

A joint which is safer, stronger and better mechanically and electrically. SRK's embody everything necessary to make such joints. There is nothing more to ask for—and the job is done in a Jiffy. 1 size for combinations of No. 14, No. 16 and No. 18, solid or stranded, up to 4 No. 14 and 2 No. 18, or equivalent.

MILLIONS IN USE



Approved by Underwriters Laboratories and Factory Mutual Laboratories

Samples upon request

Patent No. 1635293; Others Pending

Manufactured by

JIFFY WIRE CONNECTOR CO.
Hackensack, New Jersey

General Sales Office
G. Dann. Montgomery, Jr.
522 Broadway, New York City
Phone Canal 7533

properly there have been no complaints as to insufficient durability or poor resistivity against mechanical destruction.

The manufacturers of this type of wire claim that owing to the particular construction of the wire it is impossible to interchange the ends of the leads by mistake when making connections. Thus phase and neutral conductor cannot be interchanged inadvertently. The costs of installation are about the same as the costs of installing normal rubber insulated wire (NGA) in insulated conduit with metal sheath. Based on the copper price of May 25, 1929, the costs of material for 1 meter 'Rohrdraht' with rolled in bare copper wire, each wire of 1.5 sq. mm., are approximately RM 0.14, and for 1 meter NGA and 1 meter insulated conduct with metallic sheath of 2x1.5 sq. mm. approximately RM 0.34. These are average prices and illustrate the fact that the costs of 'Rohrdraht' are considerably lower than those of conductors in insulated conduit with metal sheath.

'Rohrdraht' of the type described above is largely manufactured by the Siemens-Schuckertwerke A.-G.

Rubber Conduit

In our territory we are partly installing rubber conduit for under plaster work. The installation is effected as follows: A channel is chiseled or ground into the ready erected wall, into which the rubber conduit is placed and covered with plaster. Having insured by a suitable test that the wall and the conduit are perfectly dry the wires will be drawn into the conduit. With this method of installation we have had very favorable experience."

* * *

Correction

In the August issue of ELECTRICAL CONTRACTING, page 11, the plans and specifications for adequate wiring of the basement was credited to the Electrical League of the Niagara Frontier. Samuel S. Vineberg, manager of that league, has informed us that credit for the plans should go to the Electrical League of Milwaukee.

**220, 440, or 550 Volts
Easily changed to 110 Volts
or any other voltage, with**

**SORGEL
Air-Cooled
Transformers**

With Conduit Connections

No Extra Fittings Required



Can be installed in any convenient place inside of buildings, without enclosures or fire-proof vaults.

Approved by Underwriters

Made in 1/4 to 50 KVA.

Single-phase, 2-phase and 3-phase

**Transformers Designed
for Special Applications**

Ask for descriptive literature

Sorgel Electric Co.

Clybourn & W. Water Sts.
Milwaukee, Wis.

Manufacturers News

A department for the announcement of activities of manufacturers that are of interest to contractors, such as changes in executive personnel, branch offices, new products, etc.

G. E. Supply Houses Consolidated

Effective October 1, 1929, the fourteen wholesale distributing corporations owned by the General Electric Co., will be consolidated into the General Electric Supply Corp. (of Delaware). These companies have for many years distributed General Electric products and the plan involves no change of ownership. The consolidated corporation will be in a much better position to offer nation-wide service through its ability to give service from any one of seventy-six houses, through interchangeability of stocks, and speedier and more economical operation.

The tentative organization plans indicate corporate officers and directors as follows: Gerard Swope, chairman of board; C. E. Patterson, president and director; J. L. Buchanan, executive vice-president and director; J. G. Johannessen, vice-president, eastern region, and director; D. E. Harris, vice-president, western region, and director; N. R. Birge, A. D. Cameron, H. C. Houck, J. E. Kewley, G. C. Osborne, T. K. Quinn, E. O. Shreve and C. E. Wilson, directors; L. R. Link, secretary-treasurer, and L. M. Nichols, comptroller.

The department heads, district managers and other officers will be announced when appointed October 1.

* * *

New Lighting Fixture Manufacturer

The Moe Bros. Mfg. Co., Milwaukee, Wis., has been organized for the manufacture of lighting equipment and kindred products. Until recently, Henrik Moe, president of the new concern, and

O. E. Moe, vice-president in charge of sales, occupied like positions with the Moe-Bridges Co., Milwaukee.

T. E. Murray Dies

Thomas E. Murray, head of the Metropolitan Device Corp., the Murray Radiator Co., the Metropolitan Engineering Co., and Thos. E. Murray, Inc., died at his summer home in Wickapogue, Southampton, N. Y., July 21. Mr. Murray was 69 years old and was granted, it is said, more patents than any inventor in the United States, with the exception of Thos. A. Edison.

Granville P. Rogers Leaves A. L. E. A.

The board of directors of the Artistic Lighting Equipment Association recently presented Granville P. Rogers, formerly managing director of the association, with a radio upon the occasion of his leaving that organization to become managing director of the Steel Founders' Society of America.

Jones Metal Takes Over Abolite

The Jones Metal Products Co., West La Fayette, O., has purchased the Abolite Reflector Co. Abolite reflectors are now being manufactured in West La Fayette, but will be sold by the Abolite company through its Cleveland office in the Terminal Bldg.

Westinghouse Acquires Newark Site

The Westinghouse Electric & Mfg. Co. recently purchased in

Newark, N. J., a 22 acre site for a new warehouse and service station. It is planned that this new shop will serve the entire northern New Jersey industrial area.

This service shop will have the best of transportation facilities as this area is served by five trunk line railroads, twenty-six steamship lines, the Newark Airport, and the State Highway 25.

Williamson a Beardslee Official

Richard Williamson has been elected a vice-president of the Beardslee Chandelier Mfg. Co., Chicago, in charge of sales of the Williamson line. This line is now manufactured in the Beardslee factory under the supervision of James Williamson.

New Factory Site for Domestic Electric

The Domestic Electric Co., Cleveland, O., announces the purchase of a group of buildings and a tract of land at Kent, O., to be devoted to the manufacture of fractional horsepower motors of the universal type. The buildings comprise office and factory space, the manufacturing floor space amounting to approximately 140,000 sq. ft.

The buildings are located in the midst of an eight-acre tract of land, adjacent to the tracks of the Pennsylvania, Baltimore & Ohio, Pittsburgh & Lake Erie, and Erie railroads. A siding runs alongside a loading platform connecting with all buildings. The land surrounding the plant will be landscaped and preparations are now under way for the removal of manufacturing operations from the company's Cleveland plant.

"DETROIT" RUBBER COVERED WIRES

(Reg. U. S. Pat. Off.)

RUBBER INSULATED WIRES AND CABLES
LAMP CORDS
AUTOMOBILE WIRES
PARKWAY CABLES
LEAD ENCASED RUBBER INSULATED WIRES AND CABLES
UNIDUCT ARMORED WIRES
FLEXIBLE METALLIC CONDUIT

Detroit Insulated Wire Company
Detroit, Mich.

Division of General Cable Corporation

MANUFACTURERS' REPRESENTATIVES WANTED

To Sell the Profitable Popular Line of National Floodlight Projectors.

Jobber Policy — Dealer Protection—Wide Advertising — Innumerable Prospects

Several Good Territories Open Write at Once for Arrangements

NATIONAL APPLIANCE COMPANY

Division, Reynolds Spring Company
Jackson, Mich.

Subscribers

You can't afford to miss a single issue. Give us your new address if you have moved.

Bulletin 503 on its line of Fuswitches has been published by the W. N. Matthews Corp., St. Louis, Mo. This is a 28-page bulletin and contains many illustrations and diagrams.

* * *

The Westinghouse Electric & Mfg. Co., is distributing circular 1676-B on fittings for pipe structures. This booklet includes many new applications for these pipe fittings, such as racks in industrial establishments, railings, display racks, and pipes of all kinds.

* * *

Two new switchboard device catalogs have been issued by the General Electric Co., Schenectady, N. Y. One displays accessories while the other is devoted to current-limiting resistors and fusible cutouts.

* * *

Bulletin No. 159 covering large vertical motors has been issued by the Wagner Electric Corp., St. Louis.

* * *

J. F. Hardy, 1520 Candler Bldg., Atlanta, Ga., has been appointed a distributor for S. R. Fralick & Co., Chicago, covering the Atlanta territory embracing Georgia and South Carolina. Another appointment is that of the Southern Electrical Manufacturers Agency, Bluefield, W. Va., which will handle the company's sales in West Virginia, Virginia, North Carolina and eastern Tennessee.

* * *

A publication on airport lighting has been released by the Westinghouse Electric & Mfg. Co. This booklet contains the lighting requirements of the U. S. Department of Commerce and is also well illustrated with installation photographs showing day and night views of airports.

* * *

The Mine Safety Appliances Co., Pittsburgh, Pa., is distributing a booklet entitled "Practical Aspects of Resuscitation," compiled by Dean Edward Steidle of the School of Mining and Metallurgy of the Pennsylvania State College. It contains descriptions of methods of respiration to be used under various circumstances.



BERTHOLD SWITCH and PANEL BOARDS for LIGHT and POWER

Berthold "Selectrolite" System of Lighting Control for theatres, auditoriums, lodeghalls, etc.

GUS BERTHOLD ELECTRIC CO.
555 W. MONROE ST. CHICAGO, ILL.

Steel Cabinets



Stage Equipment

LOW COST



HIGH QUALITY JACKSON REFLECTORS

give You a break!

Here's the story in a nutshell—LOW PRICE . . . but HIGHEST QUALITY. Improved manufacturing methods have cut our production costs in half . . . That's how we do it . . . Now you can go out and double your profit and give your customers satisfaction. We have a complete, guaranteed standard quality line that enables you to land any job . . . None better—ARMCO steel covered with porcelain fire enamel, full thickness. Clean threads and attaching rings . . . Get our prices at once.

Clip this Coupon!

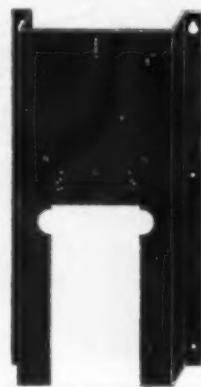
Jackson Electrical Co.,
910 W. Van Buren St.,
Chicago, Ill.
Send me bulletin quoting new low prices on
standard quality reflectors.

Name.....

Address.....

City..... State.....

New Electrical Products



The Wadsworth Electric Mfg. Co., Covington, Ky., has developed a line of metal meter boards. These boards are of one-piece formed steel construction and will not, it is said, warp, buckle, shrink or twist. They are designed for the installation of any 30 amp. switch and any standard meter and have tapped holes provided with machine screws for this purpose.



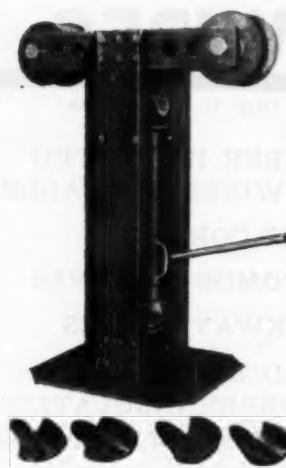
The Radio Receptor Co., Inc., 106 Seventh Ave., New York City, is introducing amplifier racks and control panel equipment for centralized use in theatres, schools, auditoriums, stadiums and other places where music or voice is to be "piped" over large areas. This equipment is of the vertical rack type, made up of powerizer units. The two-channel amplifier assembly stands 6 ft. high by 20 in. wide and comprises 6 panels. It consists of a PXP-250 powerizer, made up of two units, for each channel.



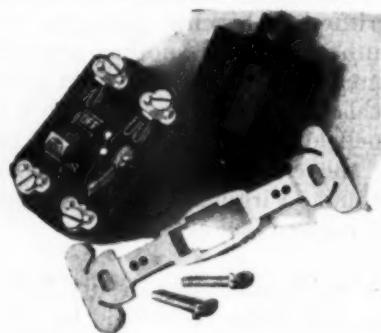
The Misener & Irving Mfg. Co., Inc., Syracuse, N. Y., is offering a rotary ceiling saw designed to cut a 3½ in. opening for the installation of the outlet box. It can be used with an ordinary carpenter's bit brace and the pan catches the plaster and shavings when the tool is in operation.



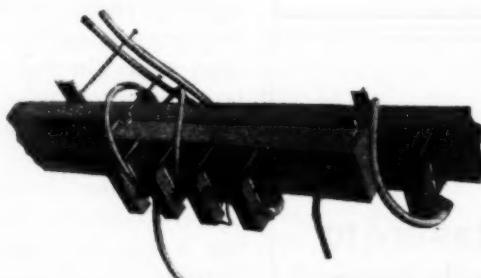
An improved starter for starting a motor directly across the line has been recently placed on the market by The Lincoln Electric Co., Cleveland, Ohio. It is controlled by the Lincoln safety push button which is standard equipment. Four screws are required in installing to hold the starter in place. Releasing two other screws permits the contactor panel to swing out, making lead contacts accessible. A cover of the drop hinge type encloses the entire mechanism and permits installation of starters closely grouped, two inches clearance between starter boxes being ample.



Gustave Lidseen, Inc., Chicago, is offering the No. 4 Chicago pipe bender. The manufacturer claims that hydraulic power up to 30 tons may be exerted with ease by one man and that the machine will bend to any radius or offset by simply adjusting rollers. It is not necessary to remove the pipe or shoe when changing for a new bend. The bender, which weighs 310 lbs. less equipment, is furnished with five bending shoes—2, 2½, 3, 3½, and 4 in.



A new shallow flush toggle switch has been developed by Harvey Hubbell, Inc., Bridgeport, Conn. This switch is designed to eliminate the burning of contacts at the "make" when controlling type "C" lamps.



The Trumbull Electric Mfg. Co., Plainville, Conn., has developed what is called Flex-A-Power to provide a maximum amount of flexibility in the use of power in industrial plants. It affords a flexible system of power outlets in plants where production requirements necessitate the frequent shifting or replacement of machinery. It is a mobile system of unit lengths adaptable without alteration to any plant. Standard lengths are joined to form any desirable plan for power distribution.

ESTIMATOR'S TIME SAVER

Every estimator's tool kit should have
 1. Rotometer . . \$4.50
 2. Tallying Machine . . \$4.50
 for taking off quantities of material quickly and accurately. Used by leading estimators. G U A R - ANTEED to satisfy you or your money back. Send \$4.50 each for Rotometer or Tally Machine, postpaid.

The Peerless Blue Print Co.

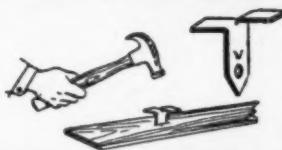
341-347 Fifth Ave.,
New York City



THE RAWLPLUG CO., INC.

66 West Broadway,
New York City

Branches in 25 Cities
Write for Bulletin B-201

Concrete Inserts Save Time in Conduit Installation

Pound them in the form; the concrete holds them solid; hang the pipe below.

Send for Bulletin or Sample

Commonwealth Electric Co.
417 Broadway, St. Paul, Minn.

Keep Up-to-Date

By reading these pages you will acquaint yourself with what is newest and best in electrical supplies and equipment.

When communicating with an advertiser mention

Electrical Contracting

Curtis Lighting, Inc., Chicago, has compiled a 64-page booklet entitled "Sales Tales or The Tampering of the Shrewd." It summarizes in short-story form the various methods of building up sales and the manner in which worthwhile jobs have been "put over" by the salesmen of Curtis distributors all over the country. Each story is by a salesman who has an interesting experience to relate.

* * *

Bulletin 110 giving a complete description of its type D Groundometer has been issued by the Borden Electric Co., Newark, N. J. This is an instrument for measuring the resistance to the flow of current from a metal electrode into the surrounding earth.

* * *

A new publication of the Wagner Electric Corp., St. Louis, Mo., is its No. 162 Bulletin containing complete transformer oil specifications, discussing the purposes, properties and methods of testing, and precautions for handling and storing this product.

* * *

A circular on air-cooled (dry type) transformers is being distributed by the Sorgel Electric Co., Milwaukee, Wis. This four-page bulletin contains illustrations, descriptions and specifications on the company's various types of auto transformers and insulating transformers.

* * *

The Frank Adam Electric Co., St. Louis, Mo., has issued a catalog descriptive of its new Fuslok dead front and safety type switchboards.

* * *

A folder on Kondu fittings has been published by the Erie Malleable Iron Co., Erie, Pa. It enumerates facts about these fittings, their advantages, and how they are used.

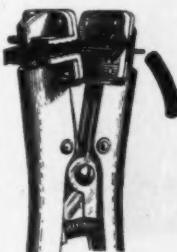
* * *

The Wagner Electric Corp., St. Louis, has moved its Cleveland service station and branch sales office to a new building at 3756 Carnegie Ave.

General Electric Supply Corp.**EDISON MAZDA LAMPS
ELECTRICAL AND RADIO SUPPLIES**

BALTIMORE NORFOLK RICHMOND CHARLOTTE

Distributors for General Electric Company, Radio Corporation of America and other large and reputable manufacturers.

E-Z WIRE STRIPPER**A HANDY TOOL**

This inexpensive tool strips wire of 10 to 20 gauge 20 times faster than usual methods.

A MONEY BACK GUARANTEE with every E-Z Wire Stripper. Send for yours now.

\$5.00 LIST

PYRAMID PRODUCTS CO.

2313 South State Street Chicago, Ill.

The Jiffy Line**Jiffy Tools Reduce Costs!**

We guarantee your satisfaction. Order any tool illustrated on the margin, on approval. If YOU are not satisfied return the material at our expense.



Pipe Bender



Nipple Chuck

A Bulletin describing the complete line in detail will be mailed upon request. Fill in the coupon below or send in your order ON APPROVAL.

ESTABLISHED 1915

Paul W. Koch & Company

25 So. Wells St., Chicago

Send information regarding free trial.

Send the "Jiffy Line" Bulletin.

Name.....

Firm.....

Street.....

Address.....

7-10-29



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Owners: Roerich Museum, Inc.

Architects:

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Sugarman & Berger

Associated

Consulting Engineer:

W. H. Dusenbury

General Contractors: Longacre
Engineering and Construction Co.

Electrical Contractors: Jandous
Electric Equipment Co.

Electrical control and convenience throughout this monumental structure is provided by

**WEBER DEPENDABLE
WIRING DEVICES**

Henry D. Sears, Gen'l Sales Agent
80 Boylston St., Boston, Mass.

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